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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

ESTABLISHED IN 1872

Vol. LXXV. No. 2 NEW YORK AND CHICAGO, JULY 13, 1922 Per Annum, $4.00 | Single Copy, 10 Cents

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PAGE 21!

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We specialize on Dies for all classes of particular work.
Send us your specifications.
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Single, Duplex and Diagonal

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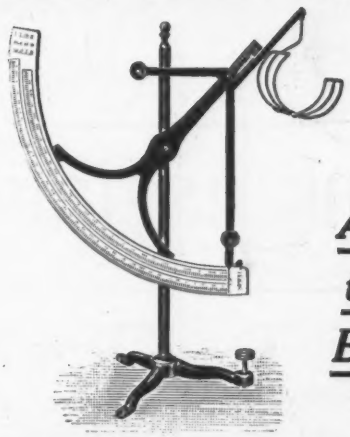

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Our carefully controlled and thoroughly standardized processes enable us to produce exactly the various starches which the paper industry has found economical and efficient.

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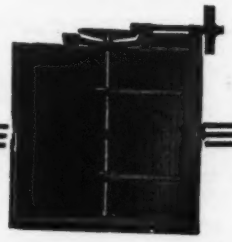
Starch



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We Specialize in the Design and Manufacture of

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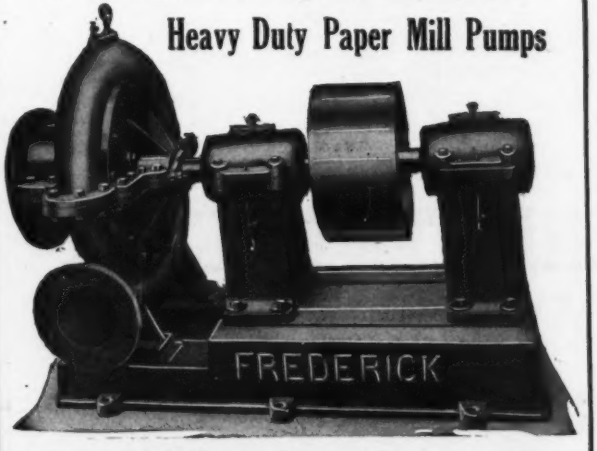

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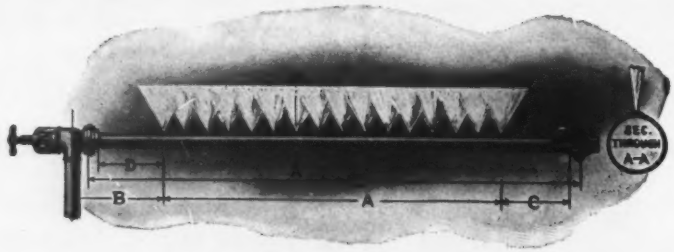

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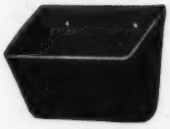

HALF a million dollars worth of well-selected stock, constantly maintained, and an organization keyed up to the theory that plant efficiency is measured by the number of orders shipped on the day of receipt, accounts for Caldwell service. Let us figure on your requirements.

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If you have ever used *any* of the Bolton products, Fly Bars, Bed Plates, Jordan Fillings, or Knives of any kind, you found them *HIGH GRADE* in quality and finish and economical in cost.

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High Grade Fly Bars, Bed Plates, Jordan Fillings and Knives

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"Hafslund Bear" **"Forshaga"**
BLEACHED SULPHITE

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EASY BLEACHING SULPHITE

STRONG UNBLEACHED SULPHITE

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EXTRA STRONG KRAFT; BLEACHED AND BLEACHABLE SULPHATE

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Tonnage available on dock for prompt shipment

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For making Toilet Paper Rolls with or without perforations

Self-Adjusting—Easy to Operate
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AUTOMATIC TUBE MACHINES

FOR MAKING TUBES FOR TOILET PAPER ROLLS
CAPABLE OF PRODUCING 3,600 WIRE STITCHED
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Also machines for making Sanitary Crepe Paper Towels, Slitting and Rewinding Machines, Drop Roll Slitters, Side and Center Seam Merchandise Envelope Machines, Photo Mount Beveling Machines, Candy Bag Machines, Punch Presses for Playing Cards, Rotary Card Cutting and Collating Machines, Etc. CORRESPONDENCE SOLICITED.

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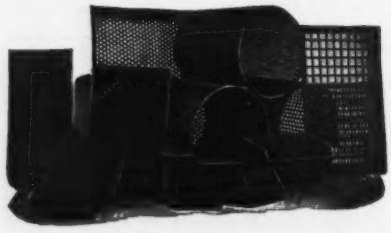
IN STEEL AND ALLOYED METALS
For Pulp and Paper Mills



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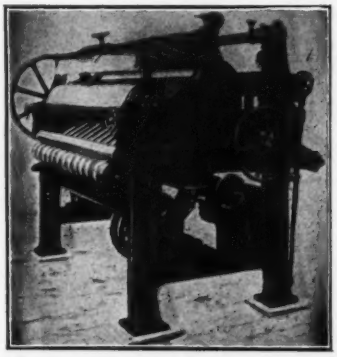

Revolving Paper Cutters—Rag Cutters—Cylinder Paper Machines—Washing and Beating Engines—Chilled Iron and Paper Calenders—Fan and Stuff Pumps—Engine Roll Bars and Bed Plates—
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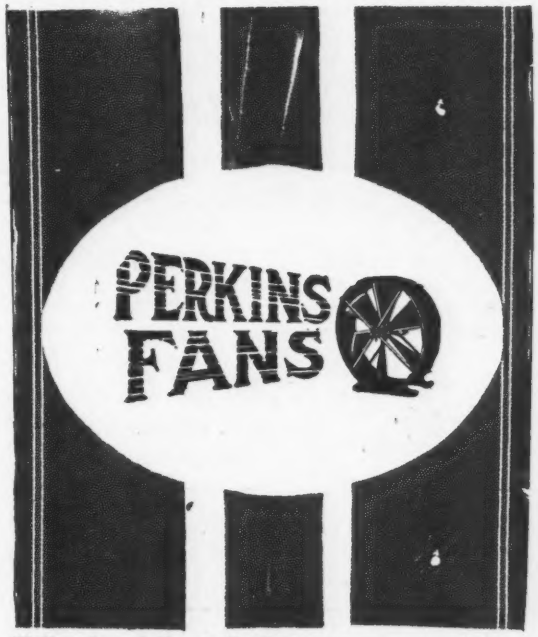

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Announcing The IMPROVED KENWOOD TAN JACKET

Three years' experiments resulting in new methods of construction, which required especially designed machinery, some of it necessarily built in the Kenwood plant, have developed this jacket.

The result is greater strength; a smoother, softer, more resilient surface; a jacket that will shrink back more tightly and hug the roll more firmly; that is not likely to creep or lump; a jacket that permits change of deckle out or in; that removes more water.

The perfection of the Kenwood Tan Jacket and the improvements in operation resulting from its use make unnecessary the installation of SUCTION COUCH ROLLS.

Kenwood Tan Jackets being woven in layers or strata may be worn away to the last layer without endangering wires.

Particulars on request.

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Splicing Tissue

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PAPER MAKERS' SUPPLIES

CHEMICAL AND MECHANICAL PULPS

COTTON, JUTE AND FLAX WASTES

EAST INDIA MERCHANDISE

Blotting Paper of the Best Quality

MANUFACTURED BY

THE EATON-DIKEMAN COMPANY

LEE, MASS.

Manufacturers of Blotting, Matrix, Filter and all other grades of absorbent papers.

Registered brands Magnet and Columbian, also Lenox and Arlington.

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GREASEPROOF PARCHMENT PAPERS

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OUR PAPERS ARE EXCELLENT FOR MEAT MARKETS, GROCERS AND GENERAL PACKING HOUSE REQUIREMENTS

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We offer a full line of

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and furnish precise directions on application for

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Half a century's experience enables us to furnish goods answering requirements and to give reliable service

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WILL SHOW BY ANALYSIS THE EXACT MIXTURE YOUR ORDER CALLS FOR

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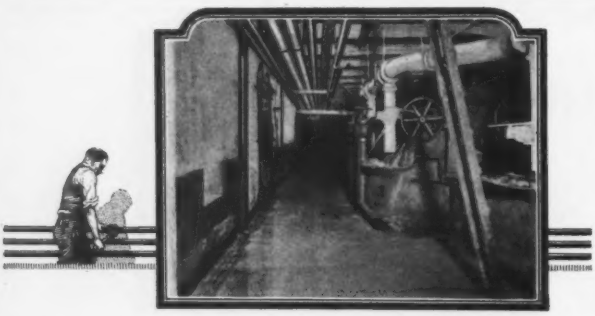

"We Had a White Elephant Once upon a Time"—

Said the paper mill superintendent, "and that white elephant was the pipe in our mill. It was practically new, but it simply couldn't withstand the corrosive elements. Every time a section rusted through and replacement was necessary, production stopped. Naturally production and maintenance costs climbed way out of reason. I soon stopped the trouble by replacing with genuine wrought iron pipe, and everything has been running smoothly ever since. It was a lesson to me—and a costly one too."

The time to avoid such trouble is at the beginning. Put in cheap pipe and it's bound to be the most expensive. Install Reading Genuine Wrought Iron Pipe and minimum ultimate cost is inevitable. By that, we mean, you can expect a minimum pipe cost per year of service—a big factor in maintaining a high production schedule with low manufacturing and maintenance costs.

If you are contemplating building additions to your mill, see that Reading—the 100% genuine wrought iron pipe—is used. If replacements are necessary, let them be the last by installing Reading.

Surely, it will pay you to investigate. Our bulletins on pipe and pipe installation will tell you the complete story. Write for them.

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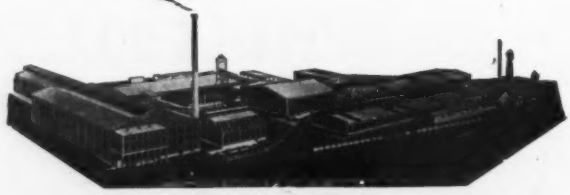
GUARANTEED GENUINE
WROUGHT IRON PIPE
World's largest makers of Genuine Wrought Iron Pipe

"World's Model Paper Mill" — K·V·P — **Kalamazoo Vegetable Parchment Co.** Kalamazoo, Michigan, U. S. A.

Yours for Bigger and Better Business

K·V·P Genuine Vegetable Parchment
Pure White Waxed Paper
Bond—White and Six Colors
Manifold—Substance 8 and 10.



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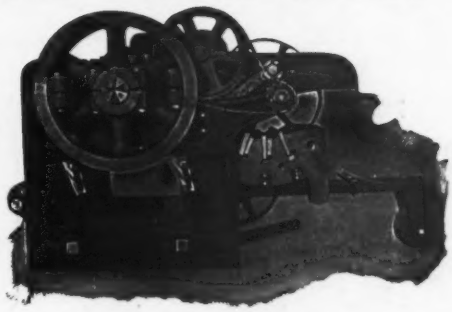
Don't Use Your Beaters For Rag Cutters

Put in a

GIANT

and cut your stock thoroughly and evenly



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Capacity 2 Tons per hour

Weight 8500 lbs.

For Roofing and Felt Stock

MACHINE KNIVES — TAYLOR, STILES & Co RIEGELSVILLE, N. J. U. S. A. — STOCK GIANT CUTTERS

Canadian Manufacturers Under Patents: WATEROUS ENGINE WORKS CO., Brantford, Ont., Can.
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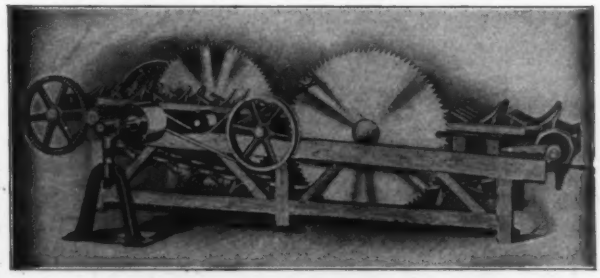
Increased Capacity Lower Cost Per Cord

THE

Ryther Slasher

is the most efficient and the lowest cost method of reducing long logs to uniform short lengths suitable for further manufacture into pulp and paper.



Built in all sizes to handle logs from 4 feet to 32 feet in length. Can be arranged to trim either one or both ends of logs if desired.

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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTY-FIRST YEAR

PUBLISHED EVERY THURSDAY BY THE

LOCKWOOD TRADE JOURNAL COMPANY, INC.

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XUM

PAPER AND PULP SAFETY MEN TO MEET IN DETROIT, SEPT. 1.

Eleventh Annual Safety Convention of the National Safety Council Will Be Attended by Public Officials, Industrial Executives and Authorities on Research, Science and Education—To Discuss All Matters Relating to Physical Safety of Employees in Paper and Pulp Mills—Special Section on Paper Industry Convenes Morning of August 29 at 9:30—The Program in Detail.

The program of the Eleventh Annual Safety Congress of the National Safety Council at Detroit, August 28 to September 1, is now complete. On July 15, a printed copy of the entire week's sessions, together with a formal invitation from the Detroit Safety Council and supplemented by a personal letter from President Arthur H. Young, calling attention to the points of greatest interest during the five-day program will be sent to 15,000 executives and safety men representing supervision over six million and more workers in the United States and Canada.

Indications now are that the 1922, Safety Convention will be the largest and most complete in the history of the National Safety Council. Never before in the history of the organization has response to invitations to participate in the Annual Safety Congress been so spontaneous. Public officials, industrial executives, well known authorities in research, science and education, have volunteered to appear on the programs to do their bit for national safety.

The program for the paper and pulp section is as follows:

Chairman, W. A. Gleason Safety Director, Hammermill Paper Company, Erie, Pa.; Vice-chairman, Adam Wilkinson, American Writing Paper Company, Holyoke, Mass.; Secretary, Miss Emilie Raub, Dill & Collins Company, Philadelphia, Pa.

FIRST SESSION

Tuesday Morning, August 29, 9:30 o'clock.

I. Report of Chairman.
II. Report of Secretary.
III. Reports of Committees.
IV. Appointment of Nominating Committee.
V. Addresses:

1. Human Relations in Industry, Fred H. Rindge, Jr., International Committee, Y. M. C. A., New York city.

2. The Goggle Problem in a Paper Mill, Raymond A. Steffen, Champion Coated Paper Company, Hamilton, Ohio.

3. Safety in the Wood Room, Frank A. Drumb, Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.

SECOND SESSION

1. The Foreman and his Responsibility for Employees under his Supervision, Adam Wilkinson, Labor Commissioner, American Writing Paper Company, Holyoke, Mass.

2. Accident Prevention from the Foreman's Viewpoint, Edward Preville, Kimberly-Clark Co., Neenah, Wis.

3. Address, Dr. Hugh P. Baker, Secretary-Treasurer, American Paper and Pulp Association, New York city.

International Raises Price of News Print

According to Chester W. Lyman; vice-president of the International Paper Company, that organization has increased the price of news print paper from $3.50 to $3.75 per hundred pounds. It is stated that this advance is applicable to all new contracts as well as to the renewals of existing contracts. Agreements signed before last Thursday, July 6, however, will be carried out at the former price of $70 per ton.

Other news print manufacturers have followed the lead of the International Paper Company in declaring a corresponding price advance, the increases being attributed to the growing demand for the commodity and the necessity for providing additional production facilities. This sudden move on the part of International came as a distinct surprise to publishers as well as other producers of news print.

For some time news print advances have been imminent. With the production of the first five months of this year greater than any year on record, predictions have been freely made of a price advance. From all appearances, wood pulp is due to take another rise in price and this should boost up the cost of news print paper ever higher.

The International Paper Company is starting new machines in several plants and is working full blast in all of its mills to meet the heavy demand. Other manufacturers are reported to be booked throughout the summer months and well into the fall on contracts recently signed. It is believed that the recent advances in price will cause publishers to contract for some time ahead in anticipation of another similar rise.

Revive Plan for Newfoundland Mill

[FROM OUR REGULAR CORRESPONDENT]

CALAIS, Me., July 10, 1922.—Maine pulp and paper men are interested in the report received here from St. John's, Newfoundland, that the plan for establishing a large paper making plant on the Humber river on the west coast of Newfoundland has been revived.

According to original plans the Newfoundland government was to guarantee the bonds of a paper company to the extent of $20,000,000 to launch the new industry, and also to guarantee interest on the issue. This it refused to do. The present proposal is that the British and Newfoundland governments each guarantee $10,000,000 bonds and it is understood that the British authorities have agreed to assume their quota.

The project was started by the Armstrong-Whitworth Company of London, and the Reid-Newfoundland Company. The Armstrong-Whitwoorth Company now proposes to buy out the Reid Company's interests and to carry on operations alone. Negotiations are proceeding with the two governments and Premier Squires, who left here last week for England, made the trip chiefly in connection with the paper project, it is reported.

Paper Merchants Protest Against Casein Duty

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 12, 1922.—The Finance Committee of the Senate is receiving protests against the 4 cents per pound duty on casein from individual paper manufacturers and associations. William C. Ridgeway, Secretary of the National Paper Trade Association and M. W. Byers, Secretary of the National Association of Stationers and Manufacturers, have both filed protests with the Committee. Mr. Byers'. protest is as follows:

"Will you permit me to call to your attention the fact that the members of this association are interested in the pending tariff bill, particularly with regard to the proposed duty on casein, as the stationers are consumers of coated paper?

"We are opposed to the proposed duty on casein because its domestic production is insufficient to meet the requirements of the country and the imported article is therefore a necessity and a duty would impose an unnecessary hardship upon consumers.

"Will you have the kindness to record our views on this subject in your records and give the same such consideration as you believe they are entitled to have at your hands?"

XUM

Bagley & Sewell to Handle British Screens

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., July 10, 1922.—The Bagley & Sewell Company of this city has just closed a contract with the Watford Engineering Works of Watford, England, to become sole agent for the United States, and manufacturer of the rotary type of screens made by the British concern. John Paramor, managing director of the Watford company, visited here last May and entered negotiations with Bagley & Sewell officials which have just been closed.

Several types of rotary screens having both an inward and outward flow will be manufactured by the local concern. The screens are used extensively in England and on the continent. They are adapted for use in the manufacture of all kinds of paper. Before the war the screen was being introduced into mills in this country, but as yet it is not in great demand. Officials of the company express a belief that they will become more popular in the future.

The Bagley & Sewell Company manufactures the flat screen, but it was said by officials that no change in equipment will be required to turn out rotaries. The new contract will mean additional work at the big local plant.

Washington Paper Corp. Buys Machinery

EAST PITTSBURGH, Pa., July 10, 1922.—The Westinghouse Electric and Manufacturing Company has recently received an interesting order from the Washington Pulp and Paper Corporation, Port Angeles, Wash.

The order includes one complete sectional individual motor drive for a 164" Bagley-Sewell Fourdrinier news print paper machine for paper production speeds of 400 to 1,200 feet per minute, including a 600 kw. synchronous motor generator set, nine section motors and gear units, and control equipment; three 1,000 hp., 240 rpm. synchronous motors for driving pulp grinders; one 200 kw. synchronous motor exciter set for pulp grinder motors; one 3,330 kv-a., 300 rpm. vertical waterwheel type generator with direct connected exciter and one 2,500 kv-a., 120 rpm. engine type AC generator.

The apparatus ordered from the Westinghouse Company will be used for increasing the capacity of the plant, which was built four years ago and is one of the most modern on the Pacific coast.

G. E. Seaman Leaves Stamsocott Co.

[FROM OUR REGULAR CORRESPONDENT]

HOPEWELL, Va., July 10, 1922.—G. E. Seaman has resigned as general sales manager of the Stamsocott Company, and is now going into business for himself. He will carry on a consulting engineering business, at present with particular relation to special installations for making linter pulp for chemical purposes.

Mr. Seaman developed linters for the Stamsocott Company from the first experimental stages through to the final operations, having selected the site at Hopewell, revamped the cotton purification buildings, which had been built by the DuPonts for making guncotton, so that a product might be made that would be usable by paper companies. After getting the plant operating satisfactorily, he got the product established at the various paper mills, and is now leaving the Stamsocott Company with the entire output sold out under contract for the balance of the year.

Gummed Paper Men to Meet July 18

The Gummed Paper Manufacturers Association has decided to repeat its special summer convention of last year, by holding a meeting July 18, at Atlantic City, when the summer convention of the National Association of Corrugated Fibre Box Manufacturers will be held at that city. Last year's meeting brought the gummed paper manufacturers into closer association with the box manufacturers, who provide opportunity for the disposal of a large proportion of the output of the gummed paper mills, and it was decided to again hold a summer meeting. Secretary Jacob Erichsen has sent out the preliminary announcements, and is busy making detailed plans for the meeting.

Several subjects have been suggested for discussion, not the least being the trade outlook, under which will come the discussion of new outlets and uses for gummed paper and tape. Standards of quality will also be discussed, as well as the situation with regard to waste materials.

Valley Paper Mills Co. to Build

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 10, 1922.—Contracts for construction of the new mill for the Valley Paper Mills Company at Neenah will be awarded within the next two or three weeks and actual building will be started before the middle of August, it was announced last week from the company's office. Plans and specifications have been ready for several days and many are now in the hands of contractors. Company officials expect to be in the building late next spring or early in the summer.

The main building will be 75 feet wide by 610 feet long, it was announced. The building will be constructed of concrete and steel up to the second floor and the upper story will be of brick. Two paper machines have been installed. The size and type has been determined but will not be announced until contracts are awarded. None of the machinery has been ordered, it was reported. The plant, with the machinery will represent an expenditure of approximately $1,000,000.

St. Regis and Hanna Mills Sold Far Ahead

WATERTOWN, N. Y., July 10, 1922.—The news print production of the St. Regis and Hanna mills has been sold for two months to come, with the plants running at full capacity, according to Raymond J. Parham, sales manager of the companies who came to the city from the New York office for over the Fourth of July.

He says that prices are holding firm. The contract figure is 3½ cents a pound and spot paper sells for 3¾ to 4 cents a pound. "As a matter of fact there is very little spot paper on the market and those who may have it could get four cents a pound if they had the desire to charge it," said Mr. Parham.

Mr. Parham expressed the feeling that it is a matter of increased demand, colored to a considerable extent by the cost of production, that is forcing the price upward. The news print mills are back to full capacity operations, yet the market is short of paper. That his mills will be operating at top speed for months to come is evident by the remarks of the sales manager.

G. F. Steele Forms News Print Corporation

George F. Steele, formerly manager of the Canadian Paper Export Company and long prominently connected with the paper industry, who has just returned from a trip to the Scandinavian countries, has with L. Calder and F. W. Westlake incorporated the News Print Corporation under New York State laws to act as sales agent for news print paper. The capital stock is placed at $200,000. J. A. Brady, 33 W. 42nd street, New York, is mentioned as the attorney.

George G. Tayloe Returnes from Western Trip

MEMPHIS, Tenn., July 10, 1922.—George G. Tayloe, President, Tayloe Paper Company together with Mrs. Tayloe has just returned from a few weeks' trip to California. On their way home they stopped a few days in Omaha to see Mr. and Mrs. F. W. Carpenter and other friends there. Mr. Tayloe and his brother were connected with the Carpenter Paper Company before they established their own house in Memphis.

XUM

A. B. THOMAS RESIGNS AS GEN. MGR. OF THE EDDY CO.

Decision to Resign Follows Recent Annual Meeting of the Stockholders and Directors at Which the Affairs of the Concern Were Placed in the Hands of an Executive Committee Consisting of C. A. Blaney, President, C. E. Nelson and Oscar Gumbinsky—Future Plans of Mr. Thomas, Who Is One of Best Known Board Makers in America, Are Unknown—Other Michigan News.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 10, 1922.—A. B. Thomas, for the past year general manager of the Eddy Paper Company, Three Rivers and White Pigeon, has resigned his position, the action taking effect July 1.

The decision to resign followed the recent annual meeting of the stockholders and directors, at which time the affairs of the big concern, including the buying and selling, as well as general financing, was placed in the hands of an executive committee, consisting of C. A. Blaney, president, C. E. Nelson and Oscar Gumbinsky.

With the appointment of this committee and the granting of the unusual powers, Mr. Thomas immediately tendered his resignation in writing. It is reported the resignation was accepted with regret. His successor, who will probably be dignified with the title of general manager of the plant, not company, has not been selected.

The appointment of Mr. Thomas as general manager of the Eddy Paper Company was a rather spectacular incident. He had for years been holding a similar position with the MacSimBar Paper Company, Otsego. When Oscar Gumbinsky was elected president of the Eddy Paper Company, to succeed the late Frank H. Milham, he engaged Mr. Thomas. This was due to a series of long standing disagreements with Charles E. Nelson, over policies affecting the management.

Mr. Nelson's resignation was accepted and he in turn was immediately engaged as general manager of the MacSimBar Paper Company. Evidence of the confidence in Mr. Nelson's ability was shown when the MacSimBar directorate elevated him to the position of President, succeeding the late M. B. McClellan.

Eddy Company in the Limelight

Since this change was made, the Eddy Paper Co. has been much in the limelight. Caught in the slump that affected board mills throughout the country and suffering heavy losses through a depreciated inventory, the Eddy concern was obliged to refinance. A bond issue of $1,250,000 was authorized and subscribed. This was not sufficient to care for the needs of the company and in the plans for re-arrangement, Oscar Gumbinsky tendered his post of president and was succeeded by Charles A. Blaney. One of Mr. Blaney's first steps was to change the outstanding bond issue from $1,250,000 to $2,250,000, thus taking care of bank indebtedness and furnishing adequate working capital. This issue is now being taken up by the stockholders.

It is understood that the differences existing between Mr. Nelson and Mr. Gumbinsky have been patched up. The Gumbinskys, combined, are by far the heaviest stockholders in the Eddy Company and their opinions have always carried weight in the affairs of the company.

It is reported they have taken exceptions to certain plans proposed by Mr. Thomas, who declined to be relegated to a position of minor importance.

Mr. Thomas's plans for the future are not known. He is one of the best known board makers in America and a man of recognized ability in his field.

Kalamazoo Vegetable Parchment Outing

With ideal weather conditions prevailing and not an occurrence to mar the occasion, the Kalamazoo Vegetable Parchment Company's annual outing, at Long Lake, Monday, was in every way a success.

The day was given over entirely to picnic festivities, nothing of a serious nature being allowed to interrupt the hilarity of the occasion. There was baseball between the departments, a big program of field events, bathing, boating and fishing.

The noon day luncheon was served by the Kalamazoo Vegetable Parchment Company, a bounteous feed being prepared for the occasion. There were over 1,000 present and this large crowd was splendidly handled both to and from the lake.

To Go with K. V. P. Co.

Ray O. Brundage, secretary of the Chamber of Commerce, has resigned his position to accept a position with the Kalamazoo Vegetable Parchment Company. According to Jacob Kindleberger, president of the K. V. P. Company, Mr. Brundage will be engaged largely in duties incident on the erection of the immense two machine mill that is now in course of construction. He will also be used in the promotion of other development work in the Parchment community, including laying out new streets and highways, platting park sites and building homes.

Watervliet Paper Co. to Enlarge

The Waterliet Paper Company, as inaugural steps in a campaign that will result in increasing the capacity of its plant, has placed orders for a Uno throw engine and a big generatoor, which will be added to the present power plant equipment.

The engine is Nordberg built, of the most approved type and will generate from 1,500 to 1,800 horse power. It will be direct connected to a Crocker-Wheeler 1,000 k.w. generator. This will be followed by the installation of a new motor drive for the paper machine, not as yet ordered, also an entire overhauling of the washing and beating equipment.

The Waterliet Paper Company specializes in the manufacture of raw stock for coating and boasts a fine market for this particular finish of paper.

Hinckley Fibre Co. Sold

UTICA, N.Y., July 7, 1922.—The Hinckley Fibre Company, with pulpwood plants at Hinckley, which was placed in receivership some time ago, was sold at public auction for $501,340.93 July 1. Henry R. Beebe, receiver, sold the property at the Court House at Herkimer to a new corporation composed mostly of creditors, which is known as the Hinckley Corporation.

The new corporation, composed technically of T. Harvey Ferris, Thayer Burgess and William F. Newton, will take over the affairs of the company subject to the approval of Judge Frank Cooper at Albany next Monday. Judge Cooper will have to approve the reorganization plan before any of this can take effect.

About 90 per cent of the firm's creditors have siginified their intention of taking stock or bonds in the new concern as payment of their claims. The purchase price was, in reality, $60,000 as the stipulation of sale included the buyers taking over all liens against the property and including value of wood in the stream. The wood amounted to $154,295.01 and claims against the old concern stood at $287,045.92.

The new concern is temporarily incorporated for $20,000, but should approval to the plan be made, this will be increased shortly to a capitalization of $1,217,000. Appraisers had placed a figure of $419,725.00 on the assets of the defunct company.

The property sold includes wood pulp-making plant at Hinckley, some timber land, most of which has been cut over; about 25,000 cords of pulpwood cut and in the woods or along the West Canada, and some other minor assets.

XUM

A New Sulphite for Book Mills!

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XUM

NEW NEWS PRICE SURPRISE TO PAPER MEN IN CANADA

Although an Increase Was Not Generally Looked for Until Later in the Year, the Upward Revision in Prices Announced in the United States Is Said to Be Warranted by the Cost of Wood and Operating Expenses—Howard Smith Paper Mills, Ltd., Prepare Plans for an Extension to Their Main Building at Cornwall—News Print Story from Stockholm Said to Be Absurd.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 10, 1922.—The topic of the week in the industry here has been the news from Chicago that the International Paper Company and some others have raised the price of news print to $75 per ton. The market for news print has shown such continued improvement that later in the year an upward revision in the price would have created no surprise in Canadian circles, but coming at this time it certainly has proven a surprise. At the time of writing, it is not known here whether the news is accurate. Edward Beck, the secretary of the Canadian Pulp and Paper Company, told THE PAPER TRADE JOURNAL representative that nothing definite was known, but that wood and operating costs were such as to warrant an increase, in view of the growing demand. Inquiries among various companies indicate that it is unlikely that they will make any change for the present, and that their customers will continue to receive the benefit of the present rate for the balance of the year. In any case, the report supports the contention that the situation is steadily improving. It will be recalled that last year when the Canadian agencies for the sale of news print reduced their price to $75 per ton, the International Paper Company threw a bombshell into the paper camp by making its rate $5 lower, which forced the Canadian companies to follow suit. It is regarded as rather an interesting coincidence, therefore, that the company which created such an awkward situation for the industry in the first instance should be the first to start the upward readjustment. It is now stated that competition was so keen late last year and early this year that although the price was nominally $70 per ton to the contract consumer, various devices were resorted to by manufacturers to make it a little cheaper without actually breaking the general rate openly. The demand for export business has gradually improved to the point where this may be no longer necessary, but it is claimed that past conditions were such that most of the Canadian mills were willing to make contracts which bind them for the rest of the year. Even on that point there is some disagreement, it being stated that some of the mills are booked up for 1922 at the $70 rate, while others are not so situated, while in once case a large producer is stated to be in a position to readjust prices to prevailing conditions. Certain it is that news print continues to be the most active section of the paper market. At this time of the year it would not have been surprising if there had been a diminution in the demand, but so far nothing of the kind has occurred. The mills are all busy, and are shipping news print as fast as it can be produced. Another phase of the situation is that Germany, according to the reports of the United States Board of Commerce, has been forced to reduce the amount of paper licensed for export to 10 per cent of the paper which had previously been so licensed.

Absurd Story re Scandinavian News Print

Another stirring piece of news printed here was contained in a cable from Stockholm stating that arrangements had been made for the marketing of the entire output of the Scandinavian news print mills in the United States. Naturally a statement of such sweeping character and importance to the Canadian export interests aroused much surprise and conjecture, especially as it was stated that the arrangement had been made through the Canadian Export Paper Company. Inquiry in well-informed circles reveals that the cablegram is entirely misleading, and is based on a comparatively small transaction. The real facts, as related by an official familiar with all the details of the Canadian news print situation, are that George F. Steele, formerly general manager of the Canadian Export Paper Company, has been visiting the Scandinavian countries during the past three months, and it is understood that while there he secured the representation or agency in the United States of one or two of the Scandinavian mills. Mr. Steele has now returned to New York, and it is expected that he will shortly make a statement in connection with the matter.

Howard Smith Announces Extension

The Howard Smith Paper Mills, Limited, are having plans prepared for an extension to the main building of their Cornwall plant, to meet the growing requirements of business. The plant now has an output of 60 tons of bleached sulphite pulp per day, and 50 tons of paper. The company manufactures all its raw materials. The management reports that the export business of the company is picking up in a most encouraging way, and paper is now being shipped to Australia, New Zealand, South Africa, and Great Britain. The domestic demand is also better, and a steady diminution of the imports of the classes of paper which the company manufactures is noted.

Argentine as a Market for Wallpaper

The Canadian Trade Commissioner for Canada in the Argentine informed the Department of Trade and Commerce at Ottawa that the Argentine Republic offers a favorable field for exports of wallpaper, her imports amounting to an average of 670,000 kg., or nearly 1,500,000 pounds per annum. This product is not manufactured in the country. Up to the year 1914 Germany was the principal source of supply, followed by France, Belgium, and the United Kingdom. Germany is making strong efforts to regain the pre-eminence which she had before the war, and, in the matter of price has, until recently, been able to defeat all competitors. Within the past few months, however, there has been a great increase in the cost of German papers, and owing to the low quality of the product it does not now seem probable that she will make any serious advances for some considerable time. The defects in the German wallpaper are due partly to the quality of the paper used, but principally to the very poor colors and to the inferior method of printing. In fact most of the samples examined by the Canadian Commissioner were so defective that the color came off on the hands, and the merest touch left an indelible mark. Canadian wallpapers are becoming well known in the Argentine, and are popular with purchasers.

Canadian Tree Seed for Britain

The Canadian Forestry Branch is doing a considerable work in the distribution of the seeds of native coniferous trees. The largest purchaser of this seed is the Forestry Commission of Great Britain, which has taken over 7,000 pounds this year. The seed is being used to reforest the acres cut over during the war, and to plant such other areas as a survey of the British Isles has shown can be more profitably devoted to trees than to any other crop. Tests have shown that a number of Canadian trees, especially Douglas fir and Sitka spruce, do well in Great Britain. Shipments of seed from the department's plant at Westminster, B.C., have also been made to Australia, New Zealand, Tasmania, and other Dominions, and some to the different provinces of Canada, as well as to associations or individuals in the United States, France, Belgium, Sweden, Norway, Finland, and Peru. The great increase in the reforestation work throughout the Empire, of which this seed collection is an evidence, is due to the lessons taught by the war.

XUM

NATIONAL U.S.A. DYES

Quick-Action is a Part of the "National" Plan

SERVICE, in the "National" sense, must be always ready. Nine-tenths of service is promptness. This is equally true whether in relation to the shipment of dyestuffs or to overcoming technical difficulties in dyeing operations.

The readiness which is part of "National" Service and which makes it worth while to our customers, is due largely to the fact that we maintain branch offices at the important centers of the dye consuming industries.

These district offices, each with ample stocks of dyestuffs and completely equipped, are located in the following cities:

New England—Boston, Hartford
Middle Atlantic States—New York, Philadelphia
Canada—Toronto, Montreal
Southern States—Charlotte
Middle West—Chicago
Far West—San Francisco

National Aniline and Chemical Company, Inc.

New York *Chicago* *Charlotte* *Toronto* *Philadelphia*
Boston *Hartford* *Montreal* *Providence* *San Francisco*

SUMMER TRADE NOT AS QUIET AS USUAL IN PHILADELPHIA

Small Supplies in the Hands of Consumers of Fine Papers and the Growing Belief That Prices Will Advance, Will, It Is Expected, Have a Tendency to Keep Buying Active Throughout the Summer—Conditions Less Satisfactory in the Coarse Paper Market Where Price Cutting Continues With Apparently No Way of Checking This Condition—Representatives of Paper Men and Printers Meet.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 11, 1922.—A more rapid recovery was made from the interruption of the Fourth of July and its preceding half week close down and distraction from business cares, than most of the distributors of fine papers believed probable. The result is that at the week end they are in good spirits and all the more firmly convinced that the marked improvement in buying, experienced during the last two months, has staying powers which will carry it through July and probably well into August. Most of the jobbers are not looking forward with any apprehension to the usual dull days of the two mid-summer months, being of opinion that the admitted shortness of stock in the hands of the consumers, and the growing belief that when the next price movement in paper takes place it will be upward, will keep buying active throughout the summer. Looking back over the first half of the year as they now can do, although not all of them have as yet completed their inventories, enough has been revealed already to show that thus far 1922 has been a satisfying, if not a highly prosperous, sales period, and there is hardly one representative dealer who is not of opinion that when the next six monthly chapters of the year's trade story can be written, the result will be a gratifying record of complete recovery from depression to normalcy at least, and more probably actual prosperity. A few believe a real boom is ahead; most of them wish that there would be no boom but merely a constant steady increase in activity.

That price changes will take place before the post-summer season sets in generally is believed, and this belief is being backed up in the convincing shape of large commitments with the mills. The extent of this provision for the future which the trade is making is limited not so much by its confidence that it will be able to dispose of the goods contracted for as by its ability to finance these deals. Growing mill orders are keeping step with the disposition of the bankers to be more liberal in their loans.

Confidence in the Market

A story is told by one of the distributors of a medium priced bond line which illustrates conditions in the local market and points out the moral that he who has confidence enough that the prosperity ahead, of which so much is heard, is real and not fancied, will gain by that confidence. This mill account is regarded by all as a most desirable one and when some time ago its representative suggested that the distributors carry full stocks and that it would protect them from a possible decline in price before September 1 by assuming financial responsibility for one half of the depreciation if it took place, the suggestion was responded to because of the confidence the distributors have in the business foresight of this particular producer. At a time when some believed that prices might yield still further, this representative was most positive in his forecasts that the trend would be upward. However, the assurance he gave was backed up by the offer of protection and the result was that large orders went into the mill. The distributors whose shelves were thus well filled consequently made particular effort to dispose of the products and with the improving market were successful in doing so. Competitors learned of this achievement and thereby were impelled also to make greater sales efforts. Success also was the reward of their concentration. The result of it all was that possibility of a break in prices was averted and the credit is given to the concern which took the initative in almost forcing better business and without yielding to the temptation to get larger orders from consumers by making reductions in prices. Belief is now entertained that when this representative concern makes an advance in prices, even of the slightest amount, the effect will be most wholesome and will stimulate business for all, it being axiomatic that it is harder to secure large orders on a falling market than a rising one.

Conditions in Coarse Paper Not So Satisfactory

In the coarse paper division of the trade the week was not so satisfactory because the industries on which it chiefly is dependent remained idle for a four-day period, some even longer and their orders were reduced in direct ratio. Cutting of prices still continues to an extent that is aggravating to the larger firms, and they see no way of checking this condition until the buyer becomes more eager to secure paper supplies than the sellers now are to get rid of their goods.

Meanwhile the paper stock business continues virtually without change, mill demands being sufficient to prevent any accumulation in warehouses, but not strong enough to cause any advance in quotations.

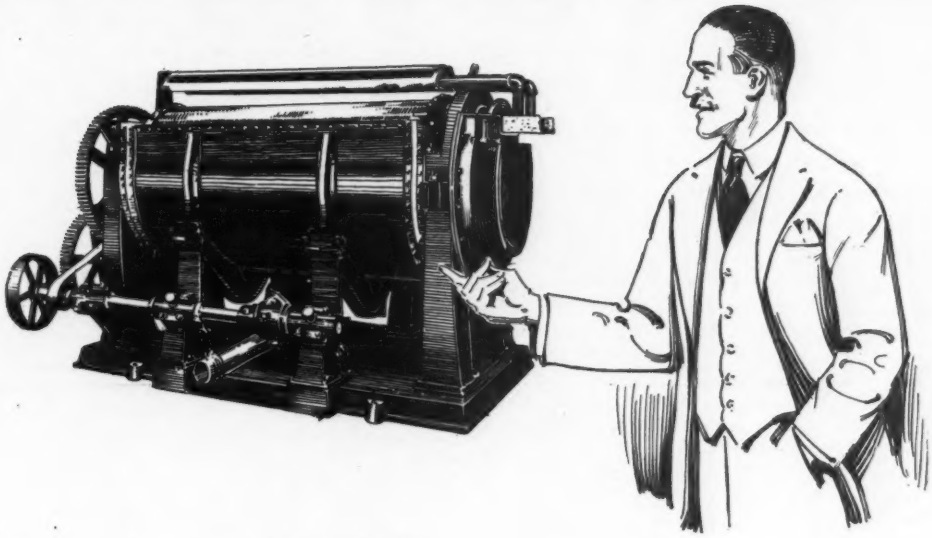
Representative Paper Men and Printers Meet

Fine paper distributors and their best customers, the printers, took opportunity during the week to congratulate each other on the wholehearted and splendid co-operation shown each for the other under the terms of the trade relation agreement entered into at the history making meeting which was held at the Kugler Cafe a month ago and which brought to a close the agitation over the long price list. Three members of the Trades Relations Committees of the Paper Trade Association and of the Typothetæ of Philadelphia sat down to luncheon Thursday noon in the Bourse for the purpose of a frank discussion of each other's experiences under the application of the agreement. The paper men were represented by Chairman George W. Ward, of the D. L. Ward Co., Harry F. Donahue of the Molten Paper Company, and Leon Beck of the Charles Beck Company, and the Typothetæ, by Chairman William Sharpless of the S. H. Burbank Company, S. Clayton Wicks of the Biddle Press, and William T. Innes of Innes & Sons. It was a splendid commentary on the happy manner in which the agreement is working out that after a month of actual experience, in the course of which the terms of the agreement had to be applied to many particular cases, neither side had any complaints to make or any objections to express, and all agreed that trade relationship was of a more pleasant and satisfactory character than it has been in during the entire history of the two organizations. It was thought advisable however, once a month to hold the get-together-meetings. Said Chairman Sharpless, "The agreement has worked out most satisfactorily to all concerned and it has brought about exactly the results that I felt would have been brought about had the long list actually been would have been brought about had the long list actually been adopted. I want to say further that I believe we now have the long list in spirit if not in name and furthermore that the time is approaching and soon will be here when the long list will be adopted nominally by the free will of the paper men because it is to their own best interests."

Wilder Brothers to Move to Larger Quarters

Sale of the building at 148 N. 5th street, now occupied by Wilder Brothers, coarse paper distributors, will necessitate the firm's removal but will not hasten its long entertained desire to secure a larger building in order to accommodate its increased trade. To make provision for this expansion the firm some time ago took title to a warehouse property on 12th street running from Brown to Olive streets and its present intention is to remove there probably

(*Continued on page* 26)



This is the Way it Works

The stock passes through the BIRD ROTARY SCREEN without needless agitation and flows to the paper machine wire, a quiet, homogeneous mixture of clean fibres and water, from which all else has been removed.

The BIRD ROTARY SCREEN increases production because there are no shut-downs for washing up the screen and because there are fewer breaks in the paper caused by lumps or slime. The quality of the stock is uniform throughout the run.

Write for complete information about the BIRD ROTARY SCREENS.

BIRD MACHINE COMPANY

South Walpole, Massachusetts

Western Representative:
T. H. Savery, Jr., 1718 Republic Bldg., Chicago, Ill.

Canadian Builders of Bird Machinery,
Canadian Ingersoll-Rand Co., Ltd.,
260 St. James St.,
Montreal, Canada

BIRD SCREENS

88-225

XUM

SUMMER TRADE NOT AS QUIET AS USUAL IN PHILADELPHIA

(*Continued from page 24*)

next month, although its lease on the 5th street property continues until almost the close of the year. It has now in use about 9,000 square feet and while the 12th street property contains an aggregate of 90,000 square feet, the firm proposes if it removes there to occupy for the present about 25,000 square feet.

Beck Co. Announces New Connection

The Charles Beck Company will send out during the week the formal announcement of its appointment by the S. D. Warren Company of distributor for the Philadelphia district, jointly with the D. L. Ward Company, which hitherto exclusively handled this account. Selection of the Beck Company as the Warren co-agent excited more trade interest and comments than any development of its kind in recent trade annals. The Beck Company sent out its announcements in a pamphlet in French fold form printed on the Warren Cameo Book Ivory, illustrated with the trade-marks of the two concerns. The Warren line added to the others Nationally known like the Strathmore, Collins cardboard, Ideal gummed papers and Certificate bonds, gives the Beck Company whose history dates back to 1864 a larger importance in the printing paper field than it ever before had. It has stocked up with a complete line of the Warren goods, involving several carloads. Andrew Simon, purchasing agent and Fred Meinecke, sales manager of the Charles Beck Company, will represent it at the Summer camp of the Warren Company at Cumberland, Maine, on July 20, 21 and 22.

Unique Champion Coated Paper Exhibit

What the few thus far privileged to see it characterized as among the most unique and valuable offerings ever made by a paper producer to its patrons, has been received by the Garrett-Buchanan Company as distributor for the Champion Coated Paper Company of Hamilton, Ohio. It consists of No. 2, Volume 5, of the Champion Monographs, devoted to paper making and made notable by having bound with it samples of bleached soda pulp and bleached and unbleached sulphite pulp. But accompanying it is the really striking and unique offering—a collection of samples of all the raw materials required for paper making and paper coating. These are packed in small pasteboard boxes all in a cardboard container measuring 6 x 9 inches. The centerpiece is made up of four small phials containing Satin White, Bleaching Powder, Blanc Fixe, and Aniline Dye. The surrounding small boxes contain Hard White Shavings, Soft White Shavings, Mixed White Shavings, Rosin, Pearl Filler, China Clay, Alum, Starch, Soda Ash, Casein, an actual piece of Fourdrinier Wire Cloth and finally a small receptacle representing pure water although none of the liquid actually is contained therein. It serves however to call attention to the fact that 1,000 lbs. of water are required to make one pound of paper and that the Champion Coated Paper Company daily uses 17,000,000 gallons of Crystal Clear water, an amount equal to that used for all purposes by so large a city as Toledo, Ohio. On each of the boxes of samples are a few terse words of description and of information concerning the use of the materials inclosed. Some of the human interest data given is that the Casein used by the Company is derived from the milk of 40,000 cows; that the Fourdrinier wire cloth shown in sample was from a belt 60 feet long and from 12 to 14 feet wide, having 5,000 meshes per square inch, but that these belts last but about three weeks each and cost four hundred dollars; that it was necessary to use some of the brilliant Carmine Aniline dye shown in sample, even in white paper to produce the shade desired.

General News of the Trade

Third honor place in the recent golf tournament of the Philadelphia Paper Trade Golf Association and the Philadelphia Printing and Publishing trades held on the Philmont links was decided during the week by the toss of a coin, R. L. Neal of A. Pomerantz & Co. wining out from C. F. Kindt, Sr., of the Winston Company, who tied with him with a low net score of 77. Mr. Neal had a handicap of but 8 as against 15 for Mr. Kindt. He thereby becomes the permanent possessor of a silver bread tray offered by the Association.

The safe arrival of President Allen E. Whiting of the Whiting-Patterson Company in Europe, as a passenger on the *Homeric* which sailed from New York on July 1 was announced in a cablegram. During Mr. Whiting's absence John W. Haraux from the New York office, is in charge at headquarters at 13th and Wood streets. C. H. Peoples, who for the last year or more has been inside the office is now visiting the outside trade. Sparta Fritz, formerly floor manager for the D. L. Ward Company and previously with the States Paper Company and subsequently for a short period with the Welsh Paper Company, during the week joined the Whiting-Patterson organization, taking charge of the order department.

F. C. Van Gilder of the sales force of Riegel & Co., for some time a sufferer, on Thursday of last week went to a hospital for an operation for appendicitis.

Myer Magil, head of the Penn. Card and Paper Company, 20 North 6th street, returned during the week from a trip to Europe.

Crabtree Mill at Wendell Sold

The biggest real estate transaction in this section for many years was consummated this week, says the *Republican Champion* of Newport, N. H., when the paper mill of Edwin Crabtree & Sons, at Wendell, was purchased by Francis P. Murphy. The report of the sale, which had been rumored about for several days, has been verified by the purchaser.

Mr. Murphy said he was not prepared to say anything at this time, regarding the final disposition of the property, but would make announcement concerning plans in the near future. It is rumored however that Mr. Murphy is purchasing for the Newport Electric Light Company, as their lease at the Richard mill expires in about a year and a half. Aubrey Crabtree, who has been superintendent of the paper mill, has gone to Wells River, Vt., where he will be in charge of the Crabtree mill there.

O. B. Andrews Co. Opens Nashville Office

NASHVILLE, Tenn., July 10, 1922.—The O. B. Andrews Company of Chattanooga, Tenn., manufacturer of paper fibre and wood shipping containers, has opened offices in Nashville at 191 Second avenue, north. According to D. S. Hutchison, who is their local representative this new firm will be able to take care of the trade at a low cost by furnishing efficient shipping containers made from fibre and corrugated paper.

D. S. Hutchison, local representative for the Andrews Company, was for 20 years connected with J. B. Ransom Company and is one of the most widely known business men of the city.

Barrett Co. to Start Mill at Latrobe

LATROBE, Pa., July 10, 1922. — It has been announced by the company that the Kingston paper mills of the Barrett Company will reopen as soon as a force of men is obtainable and will recommence the making of felt paper. Mr. Howell, former secretary of the plant and Mr. Sherwood, of Peoria, new superintendent, have arrived in town, and are working to secure as many of the former employees as possible.

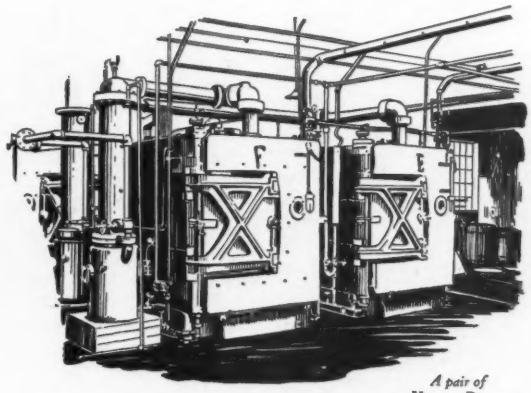
The mills have been kept in splendid condition and all is in readiness to start work with the exception of the men needed.

XUM

DUPONT

VAT ACID CHROME BASIC SULFUR DIRECT

DYESTUFFS



A pair of Vacuum Dryers

Only a few degrees between success and failure

A dyestuff may be correctly produced and precipitated, but it can be considerably dulled in shade or entirely decomposed during its drying by a sudden rise in temperature of a few degrees.

Certain dyes, because of their sensitiveness to any considerable amount of heat have to be dried under high vacuum at greatly reduced temperatures.

It is Du Pont practice, after correct production, to effect the drying of a dyestuff under accurately controlled conditions so that its desirable qualities are in no way altered, resulting in a *uniform* finished product.

E. I. du Pont de Nemours & Co., Inc.

Dyestuffs Department

WILMINGTON DELAWARE

BRANCH OFFICES:

New York Boston Providence
Philadelphia Chicago
Charlotte, N. Car. Greensboro, N. Car.
Watertown, N. Y.

STANDARD DU PONT DYESTUFFS UNIFORM

DEMAND IS FAIRLY ACTIVE IN TORONTO FOR THE SEASON

Although July Is Generally Regarded as a Quiet Month, Business During the First Portion of It Has Been Very Satisfactory and Orders Are Still Coming in Quite Freely—In News Print Especially There Are Signs of Unusual Activity—Demand for Board Is Improving With Prospects of Price Advances—Fort William Paper Co. Starts Work on Its New Plant at Fort William, Ont.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., July 10, 1922.—Although July is generally regarded as a quiet month in the paper trade business during the first portion of it has been very satisfactory and orders are still coming in quite freely although the volume is in no case very large. Prices remain firm. Stabilization of conditions should surely but steadily continue, according to the views expressed by leading wholesalers. When this period arrives, it believed that consumers will order in larger quantities than they have been doing for the past year and half. In the news print line there is every indication of unusual activity and the strengthening of prices in spite of increased output on the part of Canadian plants, some of which are booked up months ahead. In rags and paper stock, things are very good. There has been a slight advance on soft white book shavings and the requisitions for new cotton cuttings are brisk. Supplies being low, prices are advancing slightly. A good demand for manila rope prevails.

Demand for Board Is Improving

The Frankfort plant of the Canadian Paperboard Company will close down in a few days to permit of additional beaters, pumps and other equipment being installed, which will increase the capacity of the mill to about forty-five tons daily. The demand for board is picking up considerably. The Canadian paper box industry has issued notice to consumers of paper boxes and cartons stating that board has declined to such a point as to justify the opinion that its next change in price will be in an upward direction. It is pointed out that, even in the dullest years, Canadian paper box and carton manufacturers are taxed during September, October, November and December is supply customers with their needs. Due to the lightness of stocks now on hand, it is expected that such a condition will be intensified during the last few months of 1922. Consequently, manufacturers are laying special emphasis on the importance of placing orders now for fall requirements. Delivery according to requirements will thus be assured.

Work Starts on New Paper Mill

The first concrete piles for the new paper mill of the Fort William Paper Company on the Mission site, Fort William, Ont., were driven last week. Material for the building of the mill is being assembled on the ground and good progress will be made with construction. Two news print machine will be installed and it is expected that by August of next year the mill will be producing about one hundred tons of news print daily.

Ontario Paper Co. Buys Timber

The Ontario Paper Company, of Thorold, Ont., at a recent auction sale of permits to cut burnt timber in the vacant territory on the upper part of the St. Marguerite and other rivers in Quebec province, was awarded the contract at $1.05 per thousand feet, board measure. The sale was conducted by the deputy minister of lands and forests of Quebec.

Second Probe in Timber Inquiry

Although the Timber Commission of Ontario presented its report a few days ago, it is said that the inquiry into the timber and pulpwood administration of the province is not yet completed. A. W. Roebuck, of Toronto, is interviewing certain companies who were given a clean bill of health by the timber commission. It is believed that the provincial authorities wish to find out definitely whether any money is owing to the province by these companies and a second timber probe may result.

Good Year for Spanish River Mills

It is said that the result of the earnings of the Spanish River Pulp and Paper Mills, which have just closed another successful financial year, will be such as to show a return of between ten and twelve per cent on the common stock of the company. All the plants are busy and it is reported that the company has of late been getting its pulpwood at very low cost. In addition, any changes that are likely to occur in news print from now on, will favor the firm owing to the big demand there is for news print from all sections of the United States.

Great Interest in Safety Work

A. P. Costigane, of Toronto, who is safety engineer of the Ontario Pulp and Paper Makers Association, was in Iroquois Falls, Ont., recently and inspected the plant of the Abitibi Power and Paper Company. He found that conditions in the mill both as regard mechanical and other hazards all that could be desired. Many improvements in the interest of safety have been made throughout the establishment during the past few months and the company was complimented on its excellent showing.

Don Valley Paper Mills Will Resume

The Don Valley Paper Company, Toronto, whose beater and boiler departments were visited by a serious fire a few weeks ago, will soon resume the manufacture of paper. The work of reconstruction is going on and fine progress has been made. The company manufacture tag, manila, bristol, cover and other lines of specialties.

Paper Sales Expanding Activities

Paper Sales, Limited, Toronto, which recently removed into fine, new offices in the Colonial building, King street West, Toronto, report business as exceptionally good at the present time. The company will next month open an office in Montreal in order to look more closely after its customers in the eastern portion of the Dominion.

Pulp Wood Prospects Are Brighter

It is said that, owing to the improved state of the news print market and the fact that the demand for pulpwood is likely to be very fair this fall and winter, a larger number of settlers in northern Ontario are cutting and peeling wood than was first reported. Prices remain unchanged with a probability of an advance with the next few months.

Green's Slowness Tester

The Star Brass Manufacturing Company, of Boston, announces a new and improved design of the Standard Paper Stuff Slowness Tester from the drawings of Arthur B. Green, management engineer. The operating features of the instrument have not been altered from the model that has been in use now in many of the foremost paper and pulp mills and Government laboratories of the United States and Canada as Standard equipment for a number of years, but the instrument has been considerably improved in point of convenience in handling and durability of construction.

The Star Brass Manufacturing Company is already well known as a manufacturer of high grade instruments for paper and pulp mill and power plant service, such as valves, gages, etc., and in its modern plant is particularly suited to build Mr. Green's specialties in an economical and efficient manner.

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Slapping on the Brakes

is not confined
to automobiles and trains.

You are doing it every day on
your felt rolls unless they are
mounted in ball bearings
with our waterproof housings

DOUBLE YOUR FELT LIFE!

BELOIT IRON WORKS

BELOIT, WISCONSIN

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New York Trade Jottings

George A. Horton, vice-president of A. J. Pagel & Co., Inc., has left for Sweden.

* * *

George D. Bearce, engineer of the News Print Service Bureau, has returned from an intensive tour of investigation of conditions in eastern Canadian mills.

* * *

O. L. Berger, of G. D. Jensen Company, 200 Fifth avenue, New York, is on a two weeks' vacation in the mountains. He will return to New York next Monday.

* * *

Dr. Louis E. Wise, head of the Forest Chemistry Department in the New York State College of Forestry, Syracuse, was one of the city's trade visitors last week.

* * *

Bernard W. Gates, president and treasurer of the Gates Paper Twine Company, Incorporated, at Pleasantville, New York, was among the New York trade visitors last week.

* * *

O. M. Porter, secretary-treasurer of the Woodlands Section of the American Paper and Pulp Association, was in Washington last week attending a meeting of the Advisory Committee from the Paper Industry and the Bureau of Standards.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, returned to New York Tuesday of this week after a vacation tour of the lake states. Mr. Kellogg was accompanied by his family and reports that on the return trip he was so anxious to get back to New York he drove 328 miles in one day.

* * *

Dr. Hugh P. Baker, Secretary of the American Paper and Pulp Association is now on his way up into the mills of Sweden, according to a post-card received by Warren B. Bullock, Director of Publicity for the Association. Dr. Baker and his party made the trip from Gothenburg to Stockholm by canal.

* * *

A distinct surprise was afforded officials of the American Paper and Pulp Association when Gilbert Neiderlander, in charge of the mailing room of the Association introduced his charming French bride whom he met while in the service of the United States Navy. Mr. Neiderlander was congratulated upon his success in inducing the former Miss Lucille Lefoulon to make the trip across the Atlantic several weeks ago to change her name to Mrs. Gilbert Neiderlander.

J. H. McCormick Heads American Paper Mills Corp.

Joseph H. McCormick who was formerly vice-president of Henry Lindenmeyr & Sons, and who has just been elected president and general manager of the American Paper Mills Corporation, brings to his new position a wealth of experience and an enviable reputation acquired in a business lifetime devoted to the paper and allied industries, particularly the manufacturing end. Beginning in his youth with the firm of Butterworth & Smalley, then later as representative of F. Bredt & Co., he subsequently became manager of the International Pulp Company. His later affiliation was with the well-known Manning interests—the J. A. Manning Paper Company and Manning Abrasive Company. In 1920 he joined Henry Lindenmeyr & Sons as vice-president.

Mr. McCormick's long and varied experience in the manufacturing and distribution of paper and kindred products has led him to the conclusion, which has practically become a conviction, that the successful merchandising of paper in the future will be in the stocking and distribution of standardized mill products, and in his new connection that plan will be the basic feature. Always a strong and ardent advocate and practitioner of the "square deal—as much to those from whom we buy as to those to whom we sell," his present position will give him an unequalled opportunity to fulfill his long cherished ambition. The outstanding characteristic of what might be termed the "McCormick Plan" is to feature exclusively standardized mill brands of those manufacturers whose products have proven their worth. In other words, it is his intention to carry no lines that would be in competition with each other, and no private brands, thus enabling him absolutely to assure his mill connections of 100 per cent representation and loyalty.

Mr. McCormick's affiliation with the American Paper Mills Corporation is a long stride forward for that enterprising organization. Plans are already under way for a considerable increase in the present selling force, the men being selected solely for their knowledge, experience and selling ability. The office and warehouse will be combined in larger and more commodious quarters in the mid-town section of the city with railroad terminal facilities for the direct handling of carload shipments right at their very door. It can be easily realized just what this means in the way of overhead economy and assuring more efficient and direct service both for buyers and manufacturers. Large and varied stocks of all their lines will be carried.

In an interview with M. H. Freimark, who formerly was both president and treasurer of the corporation, he declared that while he was relinquishing a title (he still remains as treasurer and with as active an interest as heretofore) he was gaining in the acquisition of Mr. McCormick an invaluable active ally who would not only mean bigger and better business, but would be an effective aid in the accomplishment of many ambitious projects for the material benefit of the American Paper Mills Corporation and its mill connections. L. J. Samalman continues as Secretary of the firm.

Electric Furnace Co. Elects Officers

PHILADELPHIA, July 12, 1922.—The Electric Furnace Construction Company, 908 Chestnut street, manufacturer of Electric Furnaces, "Electro" Steam Boilers, etc., reports an increase in capital and the appointment of the following new officers: P. H. Falter, vice-president and treasurer; Arthur G. Dickson, of Dickson, Beitler & McCouch, Philadelphia, vice-president and counsel. Directors: John Gilbert, of Madeira, Hill & Co.; Wm. A. Webb, President Empire Coal Mining Company; T. H. Weisenburg.

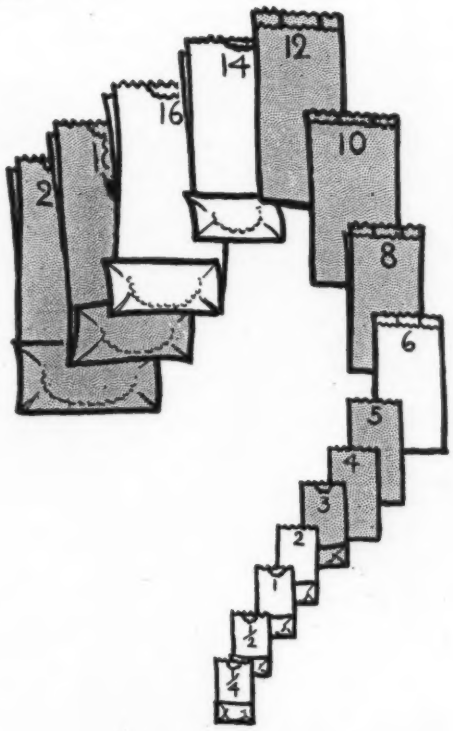
P. H. Falter, the new vice-president and treasurer, is a graduate of the Engineering Department of the University of Michigan, and until recently has been vice-president and general manager of the Canadian Electro Products Company, at Shawinigan Falls, Que., a subsidiary of the Shawinigan Water and Power Company. Prior to his connection with the Canadian Electro Products Company, he had been general manager of the Baltimore Electric Alloys Company, in the manufacture of ferro-silicon and other electric furnace alloys, and for 13 years with the Aluminum Company of America in various capacities, including design, construction and operation of a number of its plants. Mr. Falter was also general manager of the Shawinigan Electro Metals Company, Montreal, manufacturers of metallic magnesium, and he has also had considerable experience on hydro-electric power plant work at Sault Ste. Marie and Shawinigan Falls, Canada.

F. M. Nephew Resigns from Mumford Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

MUMFORD, N. Y., July 10, 1922.—Frank M. Nephew, has resigned his position as general manager of the Mumford Paper Mills, Inc., and has accepted his old position as general manager of the Flower City Tissue Mills, Inc., and its subsidiary company, the Scottsville Paper Box Board Corporation, this change taking effect immediately.

XUM



Let LAWRENCE Answer the BAG Question

with perfect safety and entire satisfaction you can concentrate on standardized Lawrence Bags. Our long experience, our tremendous facilities and our high grade of manufacture offer you just the protection you need.

LAWRENCE GROCERS' BAGS

James Lawrence, President

THE LAWRENCE BAG COMPANY
MIAMISBURG, OHIO

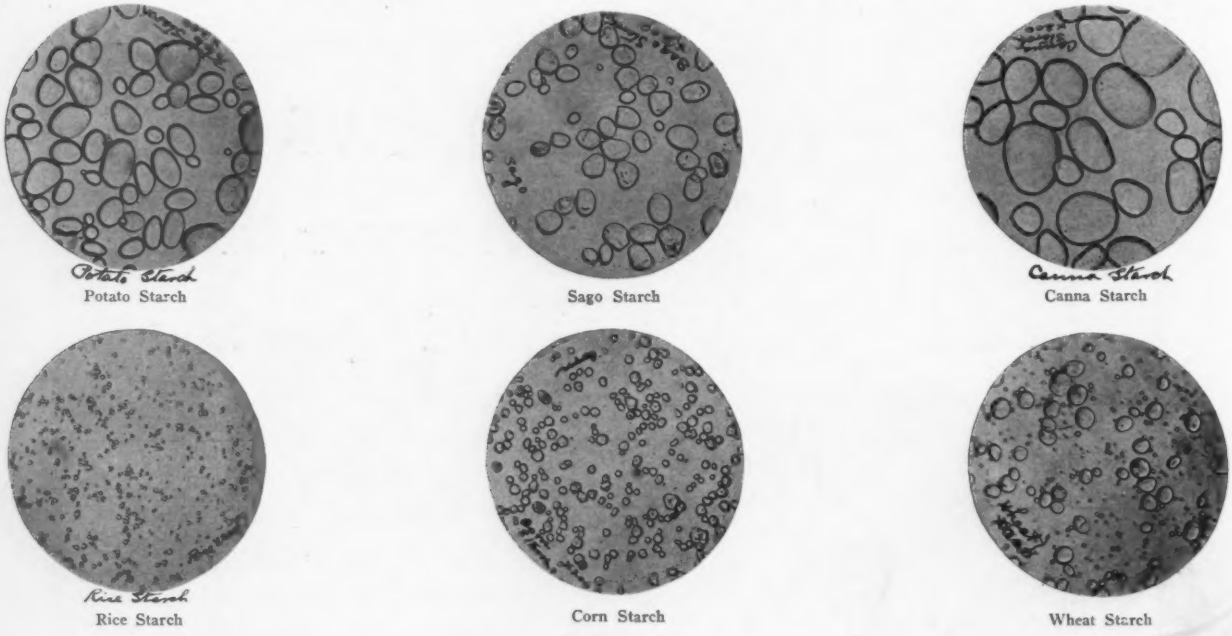
USE OF STARCH IN PAPER MANUFACTURE*

By W. A. Nivling, Technical Specialist, Boston, Mass.

Copyright, 1922, by W. A. Niveling.

Modern science tells us that in the growing vegetation we get the vitamines without which we cannot grow, or continue to function. Later when nature has completed plant growth, she begins to store up the reserve material,—*Starch*, which gives the starch manufacturer his raw material—later, nature in vegetative growth, produces the cellulose, which is your raw material.

The most advantageous use of starch, either as nature yields it or as it may be modified by the starch manufacturer depends upon both a knowledge of the object sought and a knowledge of the wide difference in solution properties of different starch products. The starch manufacturers and the user need to get together frequently, so that fuller appreciation of consumer requirements are given to the manufacturer and the manufacturer's possible products may be better known to the consumer.



Photos "A"

Photomicrographs of a few well known starches showing the wide variation in the size of the granules.

The Use of Starch in the Paper Industry

Starch has been one of the materials used in the making of paper as far back as the history of paper making is known, thin slices of papyrus being cemented together by starch. Early manufacturers of hand made sheets of paper from cotton and linen were completely sized in one operation by dipping the sheets into solutions of starch. Specimens are in existence, approximately a thousand years old, which today are suitable ink resistant for writing, showing not only the ability of even the crude starches used by the earliest paper makers to render the essential service of sizing, but also the permanence of the sizing results. The first use of starch was surface sizing. Later, extensive use developed in beater or engine sizing.

A consideration of the various starches and of their differences may be of interest and of service in the choosing of special starches for special uses. Fibers of cellulose from wood, cotton, or linen form the structure of paper. These separated from the other substances present during plant growth, differ chemically from each other but little. They do, however, differ widely in their physical properties. This is also true of the starches; they differ chemically but little from each other, or, in fact, from the cellulose of which paper is made; but physically, that is, as to their solution properties, the size of the granules, and the proportion of the granule that can be dissolved and thereby be made serviceable, they differ widely. Just as the length of the fiber and the amount made partially soluble by the hydration of beating affects the quality of your paper, so the amount and character of the solubility of starch affects its service value. Physical, rather than chemical, tests are used for measuring the service value of the different starches.

Some use is made of starch in powder form, as, for instance, making moulds for candy makers, dusting powder or rubber products, diluents for drugs, face powders, absorbents as in baking powder, etc. In such uses, obviously, solution properties or adhesive values are not of interest, but the size of the starch granule affects its service. The size of the granule determines its mobility more than does its shape. For instance, rice starch, because of the smallness of the granules, is preferable to Arrow Root starch for face powders. From the photomicrographs you will note the large granules of some starches are from 25 to 30 times larger than the smaller.

Structure of Starch Grains

Starch grains are composite. They are made up of a substance quite like cellulose and almost as insoluble. The outer wall differs from the inner substance. Starch grains in their natural state are insoluble in cold water, because they are protected by an insoluble outer wall. This outer wall is similar to cellulose, but if the water be heated above 140 degrees F.—59 degrees C, the outer wall be-

*Read at the annual Spring meeting of the American Pulp and Paper Mill Superintendents' Association, Kalamazoo, Mich., June 1-3, 1922.

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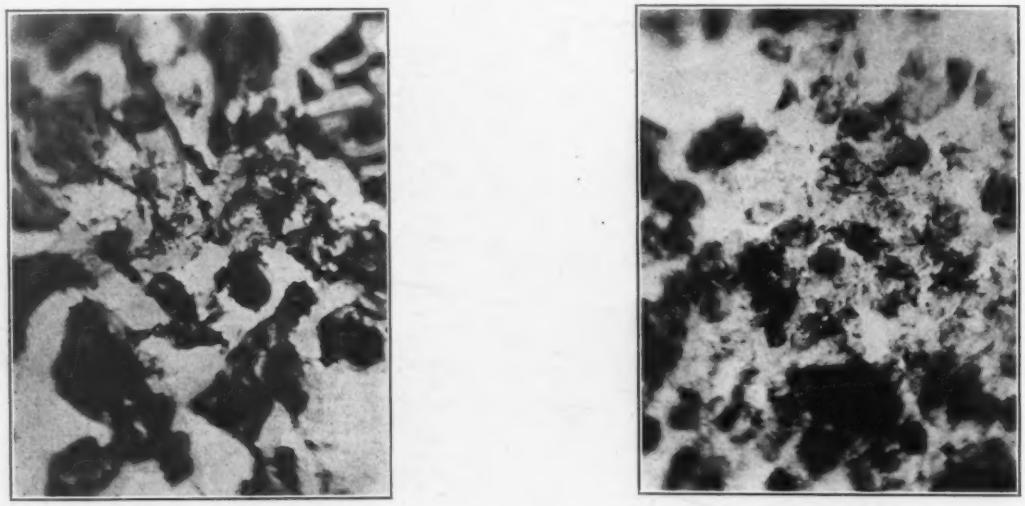
comes immediately hydrated, swells up, and allows the water to penetrate and dissolve the inner substance. In fact, if the granules were crushed or broken, this inner substance technically known as Amylose, would dissolve even in cold water. The outer substance is termed Amylo Pectin or Amylo Cellulose. Contrary to popular opinion, all of the starch granule does not dissolve, even in boiling water. Boiling water will only partially dissolve it, and from even this incomplete solution much reverts or goes out of solution on cooling. Here then we note a difference between this outer substance so like cellulose, yet differing in that it swells immediately in boiling water. This is a matter of great importance in considering service value, for the swelling, but not dissolving, has a bearing on the temperature at which the starch solutions are fluid.

Photomicrographs will show how incomplete the so-called starch solutions are. The undissolved portions affect not only the rate of flow of the starch solutions, but also the temperature at which they will be fluid. A most thorough consideration of the solubility of starch grains, particularly referring to Wheat Starch, was given by W. Biederman in an address given before the Physiological Institute at Jena April 20, 1920.

The following photomicrographs showing the incompleteness of solution of natural or unmodified starches.



PHOTOS "B"

Photomicrographs of potato starch (left) and corn starch (right) after twenty minutes in water at boiling temperature. The light areas represent that portion which has dissolved, the dark area that portion of the granules which has not dissolved.

Adhesive Values

Considering starch for its serviceability as an adhesive requires that it be dissolved. It is important to note that of the different starches there is a wide difference in solubility and in the character of the solution formed. This appears to be due to the different proportion of Amylose and Amylo Pectin, for, as has already been pointed out, the Amylo Pectin only swells to a gelatinous state at the boiling temperature and reverts or goes back to the insoluble form as the temperature falls. Solution properties will obviously vary as proportion of Amylose to Amylo Pectin varies.

If we recognize that adhesive service comes only at the instant of transition from solution to the gelatinous state, or from the gelatinous state to the solid state, it is evident adhesive value will depend upon the state and character, i. e., the proportion of these two elements, of the solution. In some industrial uses of starch, the solution is applied boiling hot, as, for instance, in the sizing and finishing of textiles. Here the adhesive service is greater than if used at lower temperatures, for a certain adhesive service is available from the fall of temperature from boiling at 212 to 130 degrees that is not available from solutions at lower temperature. This is similar to the additional power factor found in superheated steam.

Paper Makers' Uses of Starch

The use of starch in the paper industry began with surface sizing and dates back to the earliest history of paper. In 1807, following very promptly upon the invention of the Fourdrinier, resin sizing in the beaters was introduced. Prior to the use of resin sizing both starch and glue were used. The lower cost of resin quite generally displaced starch for beater sizing, but the irregularity of effective uniform resin sizing, and the objectionable features of brittleness and fading under light test, have prompted much study of beater sizing, and to a considerable extent to a return to the use of starch in beater sizing. J. L. A. McDonald, in a paper presented before the Technical Association of Paper Makers of Great Britain, September 21, 1921, on the "Fundamental Chemistry in Paper Making," states the following:

"All paper makers at one time or another encounter mysterious sizing difficulties; either the sheet suddenly becomes too hard, or the hardness no less suddenly drops away, and nothing that is done seems to have any helpful effect and, further states, that uncertainty and ignorance still surrounds the engine sizing process." He refers with much interest to the exhaustive researches of Dr. Seibers on resin sizing and to Dr. Seibers' conclusions that the effort of the paper makers should be to obtain the largest possible surface area of the free resin portion of his size. This means that the smaller the particles of precipitated resin are, the harder the sizing will be. This finer precipitation may be brought about by a complete emulsification by atomizing the size as in the Erfurt system, or by adding a colloid, like casein, glue or soluble starch, to the resin size. Just as gelatine added to cow's milk brings about a very fine precipitation of the casein, so a completely soluble starch, glue, or casein, added to resin size, will bring about a much finer and more effective precipitation of resin size. If the gelatin or a similar colloid is not added, the casein comes down in coarse flocs. It is, therefore, a reasonable assumption, at least, that some irregularity of resin sizing results may be chargeable to difference in distribution, due to coarse and fine precipitation.

Ordinary crude starch is not well suited for service as a colloid,

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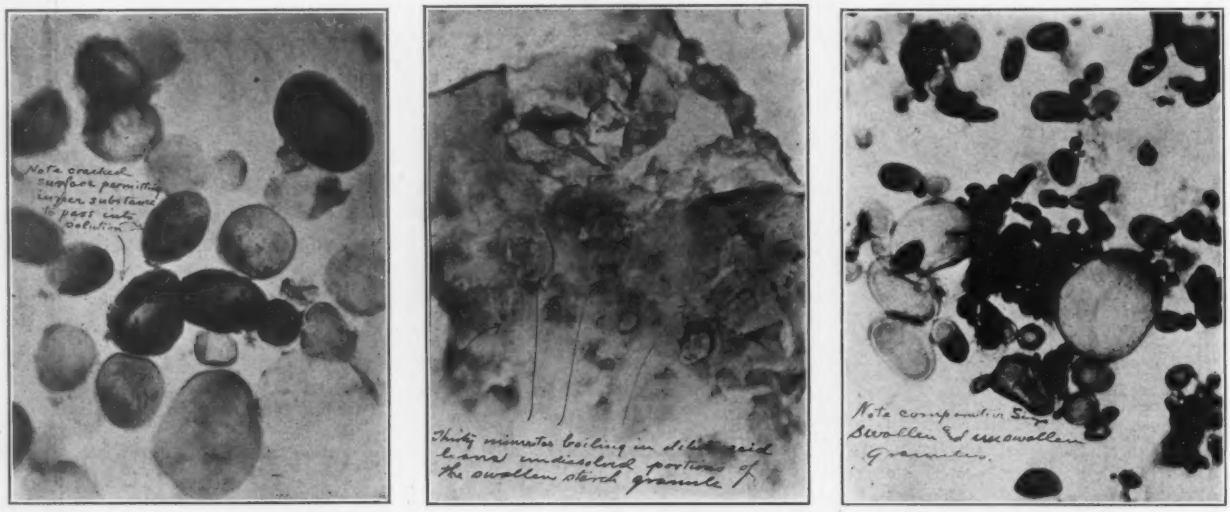
as when the solution of crude raw starches cool, coarse masses are formed. By suitable chemical processing starches can be made highly soluble, so that their solutions cool and behave quite like gelatine, and, on cooling, the particles do not mass together, but remain in complete colloidal state of solution and aid in bringing about a finer precipitation of resin. This comparison you may note from the specimen solutions in the bottles before you. True solutions are almost invariably transparent. You will note permanent transparent solutions can be made from starch. Some of these solutions before you show no change. You will note there has been no precipitation, although they have been standing for a week. In addition to more efficient resin sizing, other advantages may be secured by adding starch, as, for instance, less resin is required, and more clay or crown filler can be retained.

Starch Added to Pulp in Papers

Aside from the advantages of a highly modified starch as a colloid to add to resin size, starch is frequently added to the beater to the pulp, to aid in distribution of the resin, and also that starch may be added, not dissolved, but swollen, directly to the pulp in the beaters.

Surface Sizing

The spreading of the ink or its penetration is due to capillary action. To prevent this capillary action requires that voids shall be filled or filmed over. The best writing surface and the strongest sheet is where the filming action of the surface sizing has been greatest. Earlier in this paper I have pointed out that starches in their raw or natural state, cannot be completely dissolved by simple boiling, and that when the partial solution cools that portion which was not dissolved, but only rendered highly gelatinous by the hydration of boiling water, goes out of this partial solution, and by reverting becomes increasingly insoluble. I also pointed out that the adhesive value was present only when the binding agent was passing from solution to gelatinous state or from the gelatinous to the solid state. It is evident, therefore, that that portion


Note cracked surface permitting inner substance to pass into solution
Thirty minutes boiling in dilute acid leaves undissolved portions of the swollen starch granule
Note comparative Size Swollen and unswollen Granules.

PHOTOS "C"

Photomicrographs showing relative size of swollen and unswollen granules, also broken surface of swollen granules.

to give greater strength and handle to paper, and a better surface finish. For this purpose the starch should first be mixed with water and then heated until swelling is well under way, preferably to a temperature of 165 to 170 degrees F., and then promptly quenched with cold water to stop further solution. Used in this way, distribution is better, and there will be no sliming up of the pipes.

It has been demonstrated that the larger granule starches are retained better than the smaller grained starches. Lutz has shown that 50 per cent more potato starch than rice starch is retained. It follows, therefore, that as the swelling increases size, it also increases the retention.

The swelling also opens the granules enough to let out some of the dissolved Amylose which, on drying, will cement the fibers together. The increased size and partially opened granules is shown by the following photomicrographs.

Starch used in beater sizing or applied as a surface size during finishing on the calenders gives a brighter effect when printed on. This, because starch sizing is not affected or dissolved by printers' ink. The colors of the printers' ink, therefore, stand out with greater brilliance.

Before passing to a consideration of surface sizing, please note, starch may be advantageously used in beater sizing in two ways: Added in colloidal solution to the resin size before it is added which has gone out of solution before it reaches the sheet of paper which is to be sized has lost its sizing value. Obviously, then the starches in their natural state are not suited for surface sizing.

Methods of conversion of starch have been perfected so that completely soluble colloidal solutions can be made that remain in permanent solutions when cold for months, as can be seen in the solutions here shown.

These highly modified starch gums form solutions colloidal in character, and so like animal glue, gelatine or casein as to be entirely satisfactory for work for which, heretofore, casein, or glue, or gelatine were thought necessary. The starch gums have the decided advantage in that they are colorless, odorless, permanent in their sizing results, and of considerably less cost.

To obtain the best results in surface sizing requires that the sizing solution shall be full bodied and viscous. The size solutions should be applied hot, i. e., 130 to 150 degrees F., so that it may penetrate while the paper is submerged. In addition to penetration, high temperature also aids by favoring rapid evaporation, and the fall of temperature, in turn, aids in forming a film over the voids. This film must have time to harden. Drying, therefore, should be at low temperature. Glue or gelatine, or starch gums, owe their sizing value to their tendency to jell, or if in thin layers, to film, with fall of temperature. The film being continuous, forms a truss effect, giving both writing surface and strength. If, on the other hand, the temperature is not left low during drying, as in

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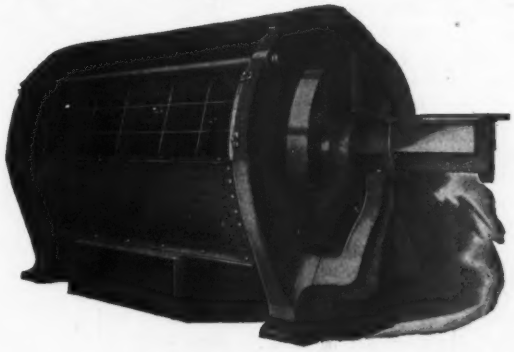

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air or loft drying, less strength is obtained from the sizing. Even with the strongest starch gum, glue or gelatine, it is well known that when the sheet passes directly from the size tub to steam-heated drying cylinders there results an enormously less sizing effect and decidedly less increase in strength than in festoon or in loft drying. Generally the greater strength of glue and its greater penetration has been credited for its greater sizing power. My observations have been that film formation is the element of greatest service. The continuous film is well shown by even ink staining by C. Frank Sammet in "Detection of Faulty Sizing," United States Department of Agriculture circ. 107. See also "Paper" May 31, 1916. More attention should therefore be given to conditions favoring film formation at the size tub by having the size viscous and taking off the excess by tightening of the squeeze rolls rather than by running the size at a lower concentration, and also to not destroying this film during the drying by melting film by hot cylinder, or destroying by mechanical means as by too great tension or by vibration from too strong a blast of air. Colloid solutions of converted starch gums give satisfactory penetration while hot, and very satisfactory film formation. They have, therefore, satisfactorily replaced glue and gelatine in many mills. There is, however, a wide difference in the effectiveness of different modified or thin boiling starch products, and choice must therefore be made. Of two converted starch products of the same fluidity, while boiling hot, one may be twice as effective in sizing results as the other. One will form a permanent solution, the other precipitate at sizing tub temperature. This shows that differing methods of converting the starch widely affect their service value. With a well-converted starch gum properly applied 33 to 40 per cent increase in breaking strength is obtainable at approximately two-thirds of the cost of glue.

Coating

Highly modified starch products have found favor in coating book and catalogue work, competing with casein. Coating for multi-colored lithograph work requires greater waterproofness than can be secured with modified starch coating. Notwithstanding the lack of waterproofness, starch coating has a number of attractive qualities not possessed by casein. Its use alone or combined with casein should be encouraged, as it helps keep casein prices in line and its use wherever possible will encourage effort on the part of the manufacturer to improve. A fortune awaits the person who develops a way of producing starch coating as waterproof as casein coating. Aside from multi-colored litho work requiring many wettings during printing, the only real objection to starch-coated sheet may be that starch coating responds to the iodine test, only by this iodine test or other chemical test can the well-made starch-coated sheet be distinguished from casein coated.

Other Uses of Starch of Interest to Paper Makers

Starch is also used by paper makers as an adhesive in combining sheets of paper for bristol board, papeteries and similar uses. Here again the starches differ in service value. Unless you have investigated, you will be astonished at the enormous difference between two cards made of the same paper stock, but pasted with different starches—one may be flexible, lively and snappy, the other heavy and brittle. Wheat flour gives a better spreading, smoother paste than cornstarch. Wheat flour is made up of three principal substances, one of which is pre-eminently superior to the others or to any other cereal or root starch. Wheat starch makes a more adhesive dextrine than cornstarch or rice starch. Potato or tapioca starches make better dextrines than wheat, corn, rice or any of the cereal starches, due doubtless to the lesser solubility of the cereal starches and their less responsiveness to the dextrinizing treatment.

Wood Veneer Glue

One other large use of starch, while not a part of paper making, is closely enough related to be of interest. This is in the making of wood veneers, or ply wood, for door and office furniture. For this work animal glue was formerly used almost exclusively. To a very large extent this has been replaced by starch. Tapioca starch is best suited for this work. Tapioca starch, so modified that when 3 to 6 per cent solution of caustic soda is added it gives a viscous glue-like solution, is used to bind the plies.

A proper conversion is essential to prevent too much wetting from absorption of the glue, which would result in swelling, and afterwards shrinking and warping in drying. Just the right conversion is also a factor of economy in effecting the spread; or covering capacity. Some 30,000,000 pounds of tapioca starch are used yearly in the wood veneer industry. From this it is evident, on present day prices, that increasing the spreading capacity 25 per cent would mean a saving of approximately a half million dollars annually.

As with cellulose chemistry, so it is with starch. The exact arrangements of the groups of making up the molecule cannot be determined by such means as can the structure of the simpler molecules, like that of water, of salt or the sugars; nevertheless, rapid progress is being made in the knowledge of the two closely related substances, cellulose and starch. This is evidenced by the replacement of animal glue and casein by starch adhesives; the production of viscose and artificial silk from cellulose; improved explosives from nitrated starch; lactic acid from starch for dyeing and for the tanning of leathers; alcohol, or, when not fermented, syrups may be made from starch. These and other developments not only produce improved products, but also effect enormous economic saving amounting to many millions. Nature produces the basis substance, starch, with abounding generosity. Starch being developed in a single season's growth, and at less cost than the nitrogenous substances, like casein, gelatine, glue or silk, all of which require intermediate animal life. These developments have come because the consumer and the producer have worked together, each recognizing that the desired goal is attained by successive advances. That which may be considered impossible today becomes the achievement of tomorrow. Science is the youth of industry; serve it and it will serve you.

Bert White Goes With Skowhegan Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

SKOWHEGAN, Me., July 10, 1922. — Bert White of Rumford has been engaged as superintendent of the Skowhegan Paper Company mill here. This mill was originally owned by the Savage Manufacturing Company and was sold to the Maine Pulp and Paper Company, which conducted it a little over a year, shutting down the middle of last September. On January 31 of this year the company filed bankruptcy proceedings in the western district of New York and John P. Abbott of Buffalo, N.Y., was appointed trustee.

On April 13 the property was sold, subject to all mortgage liens and claims, to the Geneva National Bank of Geneva, N.Y. On April 26 it came into the possession of Lansing S. Hoskins of Ontario, N. Y., and sold by him to the Skowhegan Paper Company, a corporation formed for that purpose, with the following officers: Harold Hinckley, Bangor, president; James B. Rice, Bangor, treasurer; directors, Harold Hinckley, Charles W. Mullen and James B. Rice, all of Bangor, Lansing S. Hoskins of Geneva, N.Y., and Charles Parsons of Buffalo, N.Y. The other stockholders are residents of Bangor and Boston.

The new company has a crew working on repairs and additional machinery is to be installed.

Now the C. E. Dartt Co.

[FROM OUR REGULAR CORRESPONDENT]

STAMFORD, Conn., July 10, 1922.—The name of the Shuttleworth, Holly Company, dealers in paper, bags and boxes, has been changed to the C. E. Dartt Company. C. E. Dartt has been elected president and treasurer of the company and will continue the same policy in conducting the business as in the past.

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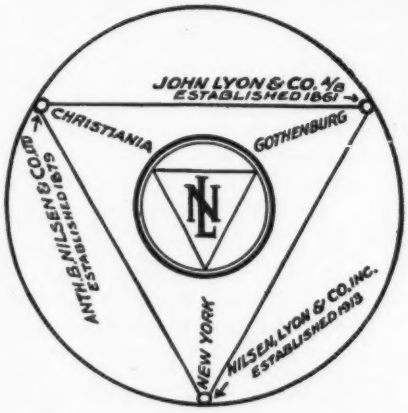

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Editorial

Vol. LXXV New York, July 13, 1922 No. 2
FIFTY-FIRST YEAR

Straws That Point the Way

"Take a straw and throw it up into the air,—you may see by that which way the wind is."

Consumers of paper should profit by this old saying to shape their course for their fall requirements. The action of the International Paper Company in raising its price for news print on contract $5.00 per ton and making the current price $75.00 per ton on contract are unmistakable indications of how the wind is blowing in the paper market. Buyers of paper who for a long time past have been providing only for their immediate requirements in the hope of profiting by further price declines cannot, if all the signs that are easily observable to the careful student of market conditions, safely pursue that course any longer. While the increase in price of the International Paper Company perhaps comes somewhat sooner than was expected, it was looked for certainly by the last quarter of the year by those best informed regarding market conditions and it is altogether warranted even at this earlier date. Statistics show that the consumption of news print has never been greater in the history of the business than during the past few months, and it is increasing constantly. This naturally has placed manufacturers in a strong position where it is possible for them to obtain more reasonable and adequate profits from their business, which under the most favorable circumstances is unusually hazardous and, which, as compared with many other lines, hardly ever brings as great returns as it should.

Not only news print but paper of practically every variety has been selling at too low prices for a long time past. No paper manufacturer likes to close down his plant because, apart from the lack of any gain for himself it disrupts his organization and also it is a well known fact that machinery idle deteriorates more rapidly than when in motion. The course of many manufacturers, however, in closing down in place of attempting to do business at some of the absurdly low prices prevailing of late for paper is to be commended. This has helped a great deal to bring about the stabilization which has been noticeable for a number of months past, and has brought available supplies of paper to such a condition that it will be more nearly possible to operate paper and pulp mills at something approaching a fair profit when activity is resumed in the late summer and early fall.

A Technical Emergency Service

The railroad strike is serving to emphasize the fact that there are as yet in this country very inadequate provisions to handle emergencies that may be caused by such labor trouble and in this connection the work recently accomplished by the Technical Emergency Service in a recent railroad strike in Germany is of more than passing interest.

The Technical Emergency Service is an organization composed of volunteers protected by and operating under the judisdiction of the German Ministry of the Interior. Its origin dates back to the disorderly period which followed the end of the war and the German revolution. It was organized by men who placed the welfare of the nation above party politics and labor disputes, and includes in its ranks, men who have held high position in official life, university professors, technical educators, students, merchants, lawyers and other professional men, former army officers and sober-minded laboring men.

The conditions created in Berlin by the railroad strike are thus described editorially in a publication issued by the American Chamber of Commerce in Berlin.

"As far as Berlin was concerned, the railroad strike was intensified by the strike of the city's employees, which left Berlin without water, gas and electricity. A cold wave aggravated the situation.

"Lack of heat, light and water drove the city's physicians and hospital doctors to despair. It was impossible to perform even the most necessary operations. It is difficult to give a picture of the misery that prevailed in the children's hospitals and especially the infant departments.

"Illustrative of the damage caused was the condition of hundreds of locomotives at the end of the strike. Under ordinary circumstances roundhouses are heated thus protecting locomotives. The strikers ran their machines in and left them in unheated houses where the water in the boilers and tubes froze. Snow and ice made it impossible to operate switches and the lack of electric current put the signal system out of commission. Berlin at night was pitch dark."

This was the situation when President Ebert called upon the Technical Emergency Service. The article continues:

"Three hours after a crew of the service had taken charge of the railroad yards, three locomotives were put under steam and placed at the disposal of the station master of the Lehrter Station. Twenty-four hours later three tracks, including all switches and signal systems, were cleared and a regular time table service was established between Berlin and Wittenberg, located half way on the line Berlin-Hamburg. In the meantime, the Emergency Service men of Hamburg had worked their way down to Wittenberg which completed the connection Hamburg-Berlin. Thus a regular freight and passenger service, even if limited, was established by non-railroad men 24 hours after the outbreak of the strike.

"Considering the fact that the Emergency Service did not ask assistance from those strike-breakers who were willing to work in spite of the strike order, the work accomplished by the Service is remarkable. But rescuing the railroad service from complete standstill, and even ruin, was not the only activity of these volunteers. Water stations and electric plants were put into commission one after another, and gradually gas plants in various parts of the city became useful utilities. All this activity was embarrassing to strike leaders and political wire pullers who had characterized the Technical Emergency Service as an organization only capable of keeping low fires under boilers and thawing out frozen engines.

"Thus it happened that the Technical Emergency Service succeeded in establishing its value as a national asset in time of great national danger. Its work in connection with the last strike also furnishes highly important lessons for other nations in solving similar labor troubles.

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"The writer visited one outpost of Berlin's water works near Lichtenberg. The station is miles away from houses and stores and is situated in the middle of a district which is all but communistic in its political views. Here three men of the Emergency Crew worked 48 consecutive hours until they had the water pumps going again, without sleep, food or other drink than cold water. Protected by only three policemen, they were constantly threatened by communistic agitators. But the men did not flinch. They stuck to their post, kept all water pumps going and waited without complaint until food supplies and relief arrived. This is the spirit of the Technical Emergency Crew and that is why the organization was able to save the German railroad system from ruin and the ill, aged and infant population from misery and death.

"The Technical Emergency Service is by no means confined to the city of Berlin. It has branches in every German province, all branches being directed by and working hand in hand with the Berlin central organization. It is called into service only when the President of the German Republic issues the order and its members can by no means be regarded as 'scabs,' for emergency work is the only work it performs."

This German organization, says a bulletin of the National City Bank, shows what will have to be done in all countries to meet the unsocial group organizations which attempt to choke society to its knees. There is no reason in the theory that merely because railroad service is continuous and cannot be interrupted without great damage to the community, railroad employes shall have a great advantage in bargaining for their compensation over farmers and other people whose labors are just as necessary, but who have not the same organized power to inflict injury. Moreover, these are the very people who in the end have to pay railroad wages. In the long run questions of this kind are not going to be settled by the power of minorities.

The labor organizations, and particularly the railroad men, will see this themselves, when they come face to face with the issue.

To Visit National Forests of Alaska

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D.C., July 10, 1922.—At the request of Secretary of Agriculture Wallace, Associate Forester E. A. Sherman of the Forest Service will leave July 10 for a two months' trip through Alaska to make a field study of departmental problems. This will be Mr. Sherman's third inspection trip to the territory.

Mr. Sherman will be joined at Juneau by C. A. Flory, district forester in charge of the 20,000,000 acres of National Forests in Alaska. They will go from Juneau to Valdez and travel by automobile to Fairbanks, where they will inspect the agricultural experiment station located nearby, and also the one at Matanuska. From Fairbanks they will travel over the new Government railroad to Seward, and thence by steamer to Cordova, the headquarters of the Chugach National Forest. From there side trips will be made to the Prince William Sound region and to Katalla. An inspection trip will also be made from Ketchikan over the Tongass National Forest in southeastern Alaska.

Mr. Sherman will make a special study of the program of road construction in the national forests of Alaska, for which Congress has appropriated $1,000,000, the possibilities of organized forest protection for the unreserved timberlands of interior Alaska, which have suffered severely from uncontrolled fires, and the relationship of the National Forests to the general industrial development of the Territory.

"Water Power in Canada"

PORT EDWARDS, Wis., June 27, 1922.

Editor, PAPER TRADE JOURNAL:

I felt flattered when I read Mr. Edward Beck's letter of June 17 in your June 22 issue, to know that I had started something, first because the article must have had teeth if it attracted attention in this way and must have stepped on the toes of an exporting nation which has enjoyed for so long an open door to a neighboring country, and second because the matter has not been given enough publicity in my opinion among the American people, generally and workingmen in particular, that they might know and understand the situation and such argument might provide the ammunition to this end.

It might be true that the paper and pulp corporations of Canada directly own only the comparatively small amount of power Mr. Beck states, but according to my informant, high in the industry in Canada they own the stock or the controlling voting power of a large amount more of power running many times greater than he states, even though it may not be in the names of the mill companies and there are thousands of horsepower yet undeveloped which cannot be disclaimed as Canada so advertises.

There is no reason, however, for belittling the effort of American workingmen and manufacturers from securing a protective tariff on the results of their labor and industry. While there may only be an imaginary line between Canada and America, American industry cannot prosper under the adverse manufacturing conditions, comparatively speaking.

I am not trying in any way to show that Canada is not a place to make investments. Canada's Government has been all wise in protecting its industry and in providing for industrial advancement, and I agree with Mr. Beck that America would be a better place for both workingman and industrial development if our Government had the foresight shown by our neighbors.

Many Americans are interested in Canadian enterprise, including the pulp and paper industry, but that is no reason why those who have invested in American industry should not be protected as against the lower costs of production within our neighbors' confines.

While as Mr. Beck says, the rates of labor in American mills govern in Canada, is true as to expert help, if he will look closer he will find common labor in many lines much lower in Canada than in similar lines in America. It was so in April of this year in many Canadian cities from personal investigation in that country.

The fact remains that existing American mills cannot hope to compete with their Canadian neighbors with an even break and unless Canada opens up and allows its pulp wood to be exported to American pulp and paper mills, built before this closed door policy was adopted by Canada, America should protect the American paper industry with a duty on imports, sufficient in size to protect this all important industry, to which hundreds of thousands of workingmen look for a livelihood, many of whom will soon be forced to look for new employment as the mills one by one will be forced to shut down and move over this imaginary line if it it not done.

Yours very truly,

B. T. MCBAIN,
NEKOOSA-EDWARDS PAPER CO.

Peshtigo Paper Co. Resumes

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., July 10, 1922.—The Peshtigo Paper Company's paper mill at Peshtigo, closed down for several weeks, resumed operations last Wednesday under management of the new owners. At the same time it was announced that the construction program at the fiber mill, outlined in this paper some weeks ago, will be started at once. The paper mill was idle about two months.

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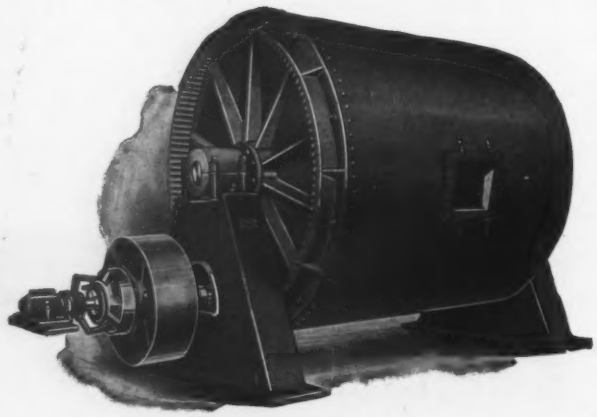

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TRENTON, N. J.

Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

PAPER TESTING METHODS

Microscopical, Chemical, and Physical Processes Described with an Account of the Apparatus Employed

By Committee on Paper Testing, Technical Association of the Pulp and Paper Industry

(Continued From Last Week)

2.—Classification of Fibers Used in Papermaking* (143)

For convenience in studying fibers, it is desirable to know the relations of the various groups and the accompanying charts indicate the arrangement of the fibers that are used for papermaking. It is to be understood that these are not a botanical classification and the standard text book on botany is to be consulted if this information is desired.

Classification of Fibers *(141)

A Suggested Grouping of Various Fibers Used for Paper-making.

- A—Seed hair fiber.....
  - Cotton
  - Bombax wool—East Indies
- B—Stem fiber (*bast* family)
  - Flax or linen
  - Hemp (cool temperate climate)
  - Jute
  - Nettle Fibers
    - Common nettle
    - China grass
    - Ramie—Water-resisting
  - Sunn (India)
  - Straw and esparto
- C—Leaf fiber.....
  - New Zealand hemp
  - Abacá
  - Sisal or
  - Henequin (Yucatan)
  - Aloe (South America) Piteira
  - Pineapple leaf fiber
- D—Fruit fiber.....Cocoanut fiber
- E—Wood fiber.....
  - Resinous or coniferous
    - Larch-Tamarack
    - Fir
    - Spruce
    - Cedar
    - Pine
    - Hemlock
    - Cypress
  - Non-resinous or broad-leaf
    - Birch
    - Mulberry
    - Beech
    - Gum
    - Tulip tree
    - Poplar

3.—Degree of Beating

By a careful examination of the fibers under the miscroscope, it is often possible to determine something of the amount of beating to which the stock has been subjected. The length of the fibers, the amount that the ends have been frayed and the degree of the breaking down of the cell-wells all give information in regard to the beating treatment. It is necessary, however, to have considerable experience before the results are reliable. The use of photomicrographs assists in this study and the accompanying plates indicate some of the characteristic differences of fibers and in beating treatment.

4.—Specks or Dirt in Paper

The appearance of a sheet may show imperfections caused by foreign materials or malformation on the wire. These are the most common causes of poor-looking paper.

Generally, specks need microscopic examination. A Bausch and Lomb binocular microscope shown in Plate 10B and a set of dissecting needles are useful. For chemical tests on small particles small test tubes made by sealing up one end of small glass tubing are convenient if the reaction is to be watched under the microscope.

Rubber. This is very objectionable. It finds its way into the stock along with rag stock, sometimes as rubber paste in tire fabrics and the like, and sometimes in paper stock as rubber bands from office waste.

Under the magnifying glass rubber specks can be stretched by pinning down one end with a dissecting needle and pulling out the speck with another needle point.

Rubber specks will give a characteristic rubber odor if burned by sticking into a flame on the end of a needle. They are soluble in carbon tetrachloride.

Rosin specks. These are translucent amber-colored specks so resembling rosin that they are easily recognized. Proof of their identity can be had by dissolving the separated speck in ether in a small tube so that the action can be watched under the microscope. Qualitative rosin tests can be applied to the speck as given under qualitative tests for rosin.

Other specks resembling small bark particles may come from size which was made from impure rosin without proper filtration. Although not as translucent as the ordinary rosin speck they usually carry enough rosin to respond to the qualitative test.

Wood specks. Chips or wood fibers which might result from the accidental grinding off of a beater paddle or similar cause can be quickly identified by applying phloroglucinol; they give a characteristic red coloration as in the groundwood test.

Iron specks. Washer or beater bars, jordans, scaly pipes, corroded overhead ironwork, and iron buttons from rags contribute iron in metallic or oxidized form at times. The metallic particles will be attracted by a magnet after being freed from the sheet. The scale or oxidized iron can be dissolved in concentrated hydrochloric acid and a drop of potassium sulphocyanate added. Iron gives a characteristic wine-red color. This test can be applied to

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Classification and Characteristics of the More Common Vegetable Fibers Used in the Industry.

	A. Seed fibers or Seed hairs		B. Stem or Bast fibers (Dicotyledonous plants)				
Fiber	Cotton (*Gossypium*).	Flax (*Linum usitatissimum*)	Hemp (*Cannabis sativa*)	Jute (*Corchorus capsularis*)	Abacá (*Musa textilis*)	Straw (Wheat, rye, barley, oat)	Esparto (*Stipa tenacissima*)
1 Shape	Flat twisted ribbon.	Cylindrical	Blunt ends often with lateral branches	Rounded ends	Uniform diameter, sharp narrow ends.		Similar to straw cells, but smaller
2 Cell wall	Thick	Very thick	Thick	About as wide as lumen	Thin		
3 Lumen	Broader than wall thickness	Very narrow	Broad exceeding wall thickness	Often wider than cell wall. Irregular	Broad and distinct.		
4 Markings	Granular between thick edges	Fine cross lines like joints or nodes	Folds, swellings and cross fissures	Longitudinal striations, no ridges or cross marks	None		Cross markings on bast cells
5 Parenchyma cells	None	None	None	None	None	Thin walled. Shaped like coffee bean	Small pearshaped cells
6 Epidermal cells	None	None	None	None	None	Thick walled serrated characteristic of straw and esparto.	
7 Bast cells	None	None	None	None	None	Long thin fibers of regular form. Small canal. Taper to fine point	
8 Other features	Diam. uniform ¾ of length. Ends cylindrical and pointed	Cross lines some times intersect like an X	Longitudinal striations	Lumen broadens at end of fiber	None		
9 Length	½" to ¾" average 1"	½" to 2½" average 1½"	1/20" to ¼"	1/20" to ⅛"	1/10" to 1½" average ¼"	1/250" to 1/20" average 1/35"	1/50" to 1/10"
10 Breadth	.0074" to .0070" average .0062"	.0030" to .0062" average .0040"	.0040" to .0080" average .0050	.0025" to .0080" average .0045"	.0040" to .0080" average .0060"		.0017" to .0045" average .0030"
11 Color reactions with chloriodide of zinc	Wine red	Purple to yellow	Purple to yellow	Yellow	Uncooked — yellow cooked—red	Blue to greenish yellow	Same as straw
12 With phloroglucine	Not colored	Not colored or slightly red	Slightly red	Deep red		Colorless to red	Same as straw
13 With aniline sulphate	Not colored	Not colored or slightly yellow	Yellowish green	Slightly yellow		Colorless to yellow.	Same as straw

	B. Stem or bast fibers		C. Leaf fibers (See B for Manila Hemp) (From leaves of many monocotyledonous plants)		E. Wood fibers from the trunk or stems of various coniferous and hard wood trees	
Fiber	Ramie (*Urticaceae*) a nettle fiber (*Bochmeria tenacissima*)	New Zealand hemp (*Phormium tenax*)	Sisal (*Agave sisalana*)	Pineapple leaf fiber or silk grass (*Ananas sativa*)	Coniferous wood fibers	Broad leaf hard wood fibers
1 Shape	Jointed and with transverse fissures	Regular and uniform.	Stiff. Broad at middle	Extremely fine and durable	Flat ribbons with spots and pores	Short and cylindrical. Often cross marked. Ends pointed
2 Cell wall	Thick at ends	Thicker than Lumen.	Often very thick in cells			
3 Lumen	Thin as a line at ends. Irregular at center	Very uniform in width	Broad lumen	Narrow like a line.		
4 Markings		Fragments of parenchyma and epidermis often on fiber	Peculiar spiral cells present. Surface pores show on short cells	Distinguished by extreme fineness	Shape and position of pores indicate kind of tree	
5 Parenchyma cells			Present in peculiar forms			
6 Epidermal cells					None	None
7 Bast cells	Long and broad. Irregular diameter. Rounded ends					
8 Other features	Irregular base	Sharp ends not divided. Smooth fibers	Blunt thick ends, seldom forked		Markings less distinct in well boiled pulps. Occasionally twisted	Always accompanied by short tubular vessels of large diameter with numerous pits
9 Length	¼" to 2.0" average 1.0"	1/10" to ⅜" average ⅓"	1/10" to ¼"	1/10" to 2'-"		
10 Breadth	.010" to .020" average .0125"	.0020" to .0070" average .0040"	.0050" to .0085"	.0010" to .0020"		
11 Color reactions with chloriodide of zinc	Dark red to green yellow	Deep yellow or brownish	Yellow	Blue to greenish yellow	Blue	Blue
12 With phloroglucine	Colorless	Reddish	Red	Colorless to light red.	Colorless	Colorless
13 With aniline sulphate	Colorless	Yellow green	Yellow	Colorless to yellow.	Colorless	Colorless

Plate No. 8 Characteristics of Fibers* (143)

A table which gives information in regard to the shape and structure of various fibers used for paper making and also give the color reaction with several of the more common stains.

the separated particle in a small tube, or the sheet suspected to contain iron may be placed on a glass plate, wetted with concentrated hydrochloric acid for five minutes, and then with 10 per cent potassium sulphocyanate solution. Each iron speck shows red when the sheet is held up to the light. The glass plate forms a convenient holder for the sheet. The red color fades in a few minutes and count should be taken immediately.

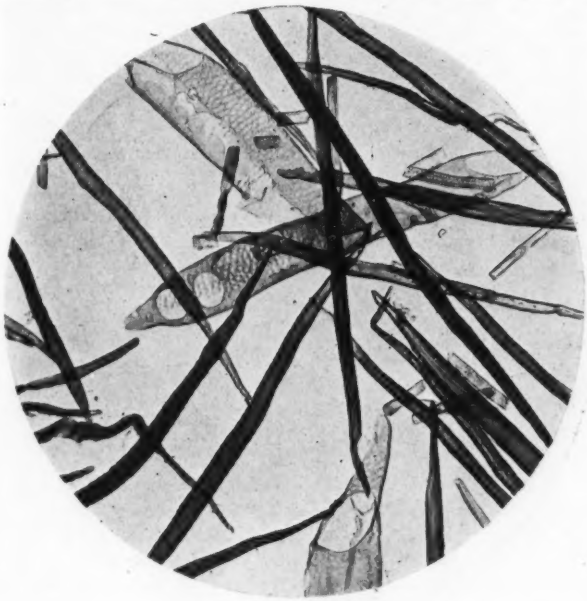

PLATE No. 9
Aspen (*Populus tremuloides*)—X100—(Bureau of Standards).

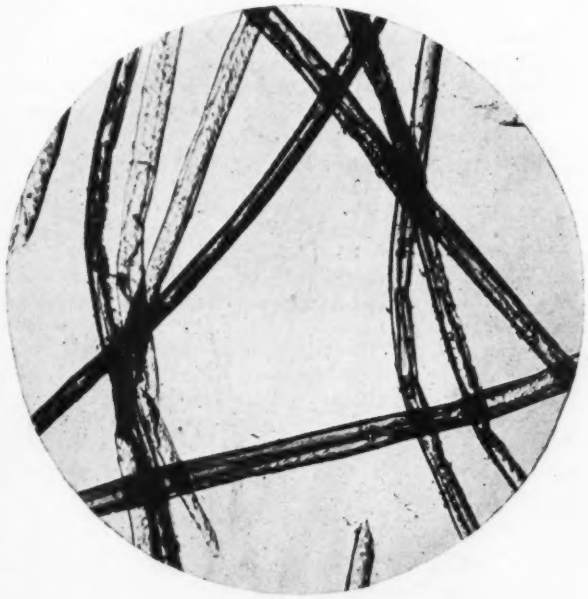

PLATE No. 10
Balsam Fir (*Abies balsamea*)—X100—(Bureau of Standards).

Another method is to immerse the paper in 2 per cent potassium ferrocyanide, then in 2 per cent acetic acid, then wash well in water. Hang the sheets vertically until dry. There will be a blue coloration wherever there was an iron speck in the sheet. This method makes a more permanent record than the sulphocyanate treatment.

Oil spots. Oil spots are translucent and can be spread or thinned with ether or chloroform. Extraction with either of these solvents removes the oil, unless it is of a peculiar pasty formation caused by use of oily rags in the stock. Mineral oil in rags is prone to form a dirty congealed mass in the washers, which specks the halfstuff with black specks in which mineral oil is the binder. Such specks in the finished sheet are not entirely removed by ether or chloroform. They are slightly translucent, and unaffected by solution in concentrated sulphuric acid.

PLATE No. 11
Chestnut (*Castanea durtata*)—X100—(Bureau of Standards).

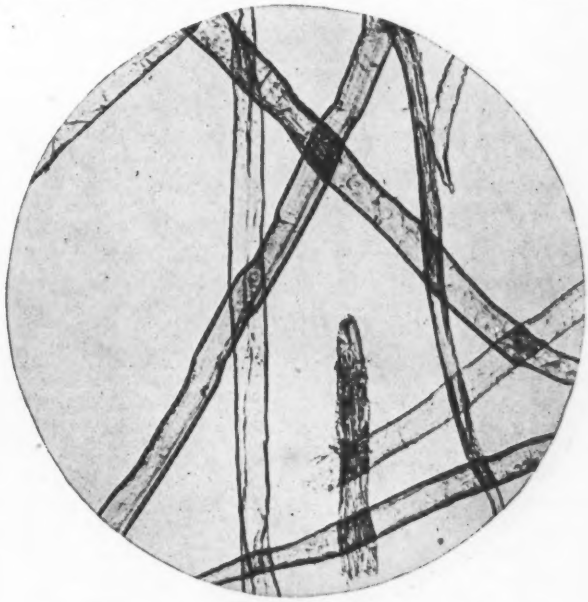

PLATE No. 12
Hemlock (*Tsuga canadensis*)—X100—(Bureau of Standards)

Color spots. Poorly ground colors such as poor ultramarine give a fine specky appearance usually identified by color only.

Alum spots. These are usually pulverized by the pressure of the

calender rolls. They are soluble in water and give a slight acid reaction with indicators. This reaction is best watched by dissolving the speck in a very small test tube and adding the indicator

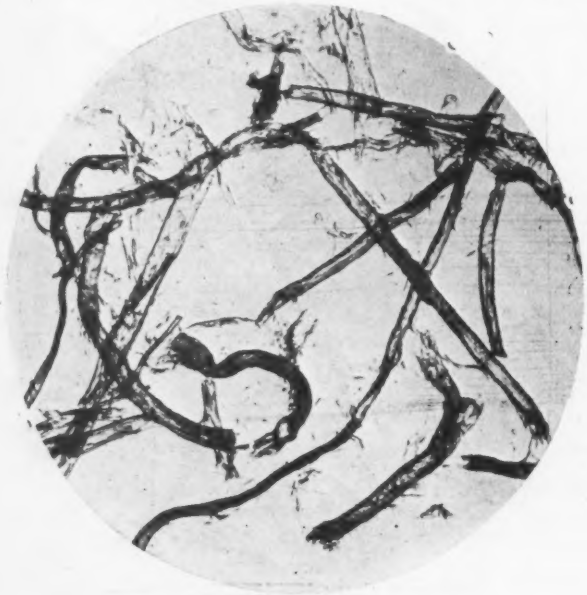

PLATE No. 13
Fibers from Rag Pulp—X100—(Bureau of Standards).

while the tube is under the microscope and against a white background.

Coal particles. Coal dust is insoluble and gives no color reac-

PLATE No. 14
Rice Straw—X100—(Bureau of Standards).

tions with any reagent. In appearance iron scale can be mistaken for it, and in doubtful cases an iron test should be made on the sheet and the unaffected black particles examined for coal.

Under the microscope it can be seen that coal particles in a calendered sheet have been so pulverized by the pressure of the rolls that they shatter very easily when picked with a dissecting needle. Large particles give a characteristic black smear when crushed and rubbed across the sheet.

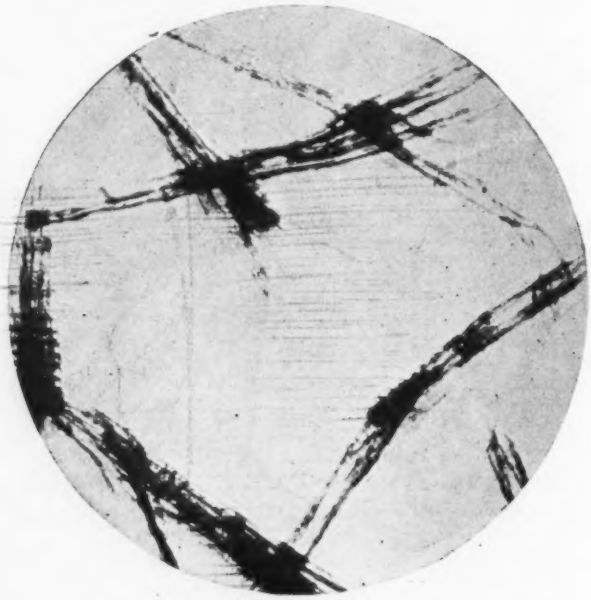

PLATE No. 15
Spruce Mechanical Pulp (*Picea canadensis*)—X100—(Bureau of Standards).

Button specks. Bone buttons ground by beaters or jordans into small pieces come through into the finished sheet as a light colored powdered spot due to crushing in the calenders. A hole is often

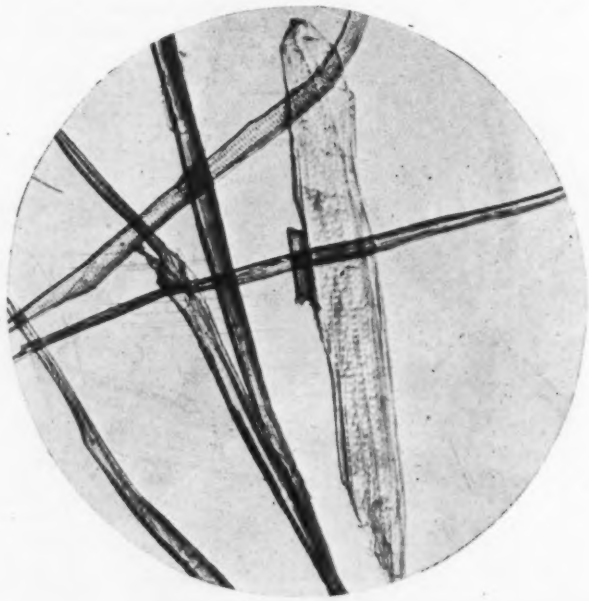

PLATE No. 16
Tulip Tree (*Liriodendron tulipfera*)—X100—(Bureau of Standards).

made at a button speck due to the crushed button piercing the sheet and then partly crumbling out after calendering. Such specks can be differentiated from alum as they are insoluble in water and give no acid reaction with the indicators.

Paper specks. In stock made from old papers small undefibered

pieces may slide through the screens and form a speck on the sheet. Such specks are fibrous and when lifted out of the sheet they can be defibered under the microscope with dissecting needles, showing their identity by this characteristic.

Foam spots. Because of the depression left after each foam bubble there is a circular spot more translucent than the rest of the sheet formed wherever foam bursts on the partly formed sheet. The result is characteristic, circular, and translucent as a small round watermark would look.

Drag spots. Stock adhering to the slices on the wire forms small uneven lumps when it drags off upon the sheet. These spots are not very common but can be recognized as an irregular formation having no foreign material present.

Knots. Fabrics in rag stock with knotted threads very often show the knots in the finished sheet. The knotted thread is easily recognized under the microscope.

5.—Starch

In addition to chemical tests for the determination of starch in paper, it is possible to determine the kind of starch used. The various untreated starches have characteristic shapes and markings which may easily be identified under the microscope. This is also possible in some cases with treated starches, used in the size-tub.

III. Physical Testing

1. Effect of Relative Humidity—A superficial examination of the published data will indicate that the physical qualities of paper are affected to a considerable degree by changes of the moisture content of the test sample. Different kinds of paper as well as different qualities are affected to a different degree but certain tendencies are obvious and the importance of the consideration of the condition of the test sample at the time of test should not be underestimated. The suggestions contained herein are not conclusive nor complete but the conclusions have been determined after a careful study of existing data.

(*a*) *Relative Humidity*—The moisture content of the test sample is affected by changes in humidity, either absolute or relative. Absolute humidity is defined as the number of grains of moisture per cubic foot of air at the temperature in question. Relative humidity is defined as the percentage of moisture present, at any particular temperature, to the amount of moisture present if the air were saturated at that temperature. The available data seem to indicate that in most cases, the variation of quality of paper bears a relation to relative humidity, rather than to absolute humidity.

In most testing laboratories that attempt to control their atmospheric conditions, a temperature of 70° F. and a relative humidity of 65 per cent is maintained. These conditions have been adopted because of work done in the past in Germany and because of the increased cost to maintain a lower relative humidity during the warm weather, when the moisture must be taken out of the air by some method of refrigeration. It is not uncommon, however, in steam heated rooms, during the winter, to obtain a relative humidity as low as fifteen per cent.

(*b*) *Moisture*—The moisture content of paper increases with increase of relative humidity and in general seems to be independent of the furnish, kind of paper, or the method of test. A composite average with the moisture content, when plotted, as ordinate and with relative humidity as the abscissa produces a regular curve, slightly concave. At 15 per cent relative humidity, the moisture content varies from three to seven per cent for different kinds of paper and, at 85 per cent relative humidity, the range is from nine to fourteen per cent, with twenty per cent as a possible saturation point at 100 per cent relative humidity. The accompanying curve indicates in a general way the tendencies of change of moisture content with relative humidity.

(*c*) *Weight*—In general, it may be said that the variation of weight due to changes of relative humidity is similar and proportional to the variation of moisture content of the paper. The variation in weight from 15 per cent relative humidity to 85 per cent relative humidity seems to be about six per cent.

(*d*) *Bursting Strength*—Data available at this time in regard to the effect of relative humidity upon the bursting strength seem to indicate that bursting strength increases with relative humidity, up to about 35 per cent relative humidity and that from that point decreases equally rapidly with increasing relative humidity. This conclusion seems to be assured from the considerable amount of data available but it is not believed that any conversion factor may yet be developed. The amount of variation is widely different for different papers and it seems to be evident that long-fibered papers are affected to a greater extent than short-fibered papers. In any case, this variation is quite evident and should be taken into consideration when careful and accurate tests are to be made.

(*e*) *Tearing Strength*—Very little data are available in regard to the relation between tearing strength and relative humidity but such work that has been done indicates that this test is markedly affected by changes of relative humidity. Tearing strength increases to a considerable extent with increase of relative humidity and the amount of this variation seems to be comparable with that in the case of the folding and tensile test.

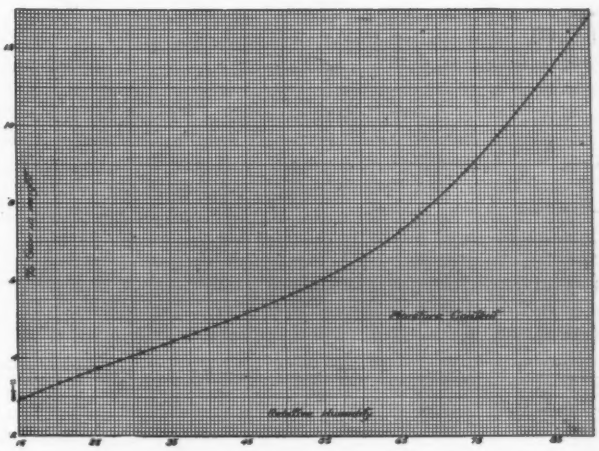

Plate No. 17 Moisture Content of Paper

A curve which represents the relation between the percentage of relative humidity and the moisture content of paper. This curve is a composite of data obtained from several sources and under different conditions.

(*f*) *Folding Endurance*—The effect of relative humidity upon this test seems to be somewhat erratic with different papers but in any case the variation is very marked. In general, the folding endurance increases rapidly with increase of relative humidity, the machine direction more rapidly than the cross direction. With certain kinds of paper, there seems to be a peak in the curve at 80 to 90 per cent relative humidity with a rapid decline, while with other papers, this peak does not appear. Data seem to indicate that this test is affected by relative humidity to a greater extent than any other.

(*g*) *Breaking or Tensile Strength*—The variation in this test seems to be very similar to that in the case of the bursting strength, but to a greater degree. Strength increases with relative humidity up to a point of about 35 per cent and then decreases at a similar rate. This variation is similar in both the machine and cross direction and in either case seems to be over twice as much as in the case of the bursting strength.

2.—Characteristics of Paper

(*a*) Machine Direction: * (3) Several methods are available for determinating the machine direction in a sample of paper. It may sometimes be ascertained by mere inspection of the sheet, as

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the formation noted on looking through it is often conclusive to the trained observer.

The usual machine wire imparts to the sheet of paper a "wire mark" consisting of a series of diamond-shaped marks, the long diagonal of which points in the machine direction. If the wire mark is sufficiently prominent so that its direction can be determined this will establish the machine direction.

If the paper is well sized and a circular piece is cut out and moistened on one side by floating on water, it will tend to roll up into a cylinder whose axis is in the machine direction of the sheet. If the paper is unsized it will become entirely soaked through on floating on water and will not curl up. This may be avoided by sizing the paper with an alcoholic solution of rosin, or with a solution of gelatine in water, drying and then making the test.

Another method of determining the machine direction is to cut two narrow strips of the paper one from either direction, place these one over the other and hold them upright in the fingers. They will droop over of their own weight and if they cling close together the under strip is in the machine direction while if the under slip falls away from the upper the latter is in the machine direction.

The form of the break made by the Mullen tester shows the machine direction, as the longest, or chief, line of rupture is always across the sheet. This is shown in Fig. 43, which illustrates four typical ruptures and in which the arrows indicate the machine direction.

(*b*) WIRE OR FELT SIDE:* (3) In many cases this may be dedetermined very easily by a simple inspection but in some papers the wire marks do not stand out at all plainly. Sometimes they may be made more prominent by plunging the sample for a moment into water and draining or blotting off the excess. The moisture causes the fibers to expand, thus undoing the work of the calenders and resorting the texture of the sheet as it left the machine wire. Inspection of a sheet thus dampened will often show that the wire marks stand out plainly, where before they were indistinguishable. This method very often proves satisfactory even for coated papers.

(*To be continued*)

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Determination of Pentosans in Plant Materials.—Emil Heuser. *Paper,* xxviii, No. 4, 22-25, 38-39 (March 30, 1921); No. 8, 28-32, 41 (April 27, 1921).—Translation by C. J. West. Pentoses and pentosans, on hydrolysis, are decomposed quantitatively into water and furfural. Pentoses and pentosans are determined by estimating the amount of furfural which they yield on distillation with hydrochloric acid. The various methods proposed for the determination of furfural are examined. Only the gravimetric methods are found to be of value in scientific work; and of these either the phloroglucinol method of Boeddener and Tollens, with correction for methyl furfural (according to Tollens, Ellett, and Ishida), or the acid method of Kerp and Unger, should be used. Perhaps further study will show that this latter method is more advantageous. The volumetric methods are suitable only for the determination of pure furfural, and further investigation is required to decide which of these is the best. The colorimetric methods are suitable only for technical work. Of these, Schwalbe's method appears to be the more suitable one.—A. P.-C.

Determination of Methyl Pentosans in Plant Materials.—Emil Heuser. *Paper,* xxviii, No. 9, 26-27 (May 4, 1921).—Translation by C. J. West. In the determination of pentosans by precipitation as furfural-phloroglusid, the methyl pentosans act similarly to the pentosans and methylfurfural-phloroglusid is precipitated also. This is usually determined by extracting the mixed phlorglusid with alcohol, which removes the methylfurfural-phloroglusid. Tollens and Ellett used the method on pure rhamnose (a methyl pentose which is fairly easily obtained), and also on a mixture of rhamnose and arabinose. They found the ratio of rhamnose to phloroglusid was not constant, and developed the formula: Rhamnose = (Ph × 1.65) — (Ph^2 × 1.84) + 0.010, in which **Ph** is the amount of phloroglusid found. With mixtures of arabinose and rhamnose more of both sugars was obtained than was used. The errors are larger than would be desirable; but the error is less than if the methylfurfural-phlorglusid was neglected. Technically the determination may be omitted in the analysis of plant materials, as the values obtained are small and the methods very unsatisfactory.—A. P.-C.

Aquatic Plants and Marsh Grasses.—Ch. Groud.—*Papier,* xxiii, 153-157 (July, 1920).—A description of the various aquatic plants and marsh grasses which are to be found in France, together with a discussion of their availability for paper making.—A. P.-C.

Production and Characteristics of Mitscherlich Sulphite Pulp.—John E. Daley. *Paper,* xxvi, No. 24, 17, 30 (Aug. 18, 1920).—A brief description of the difference between the Mitscherlich and quick cook processes, and of the characteristics of the pulps. The advantages of the Mitscherlich process are a stronger and more uniform pulp and therefore a better paper. Its drawbacks are greater length of time required in cooking, greater investment in digesters and buildings, and greater labor expense in filling and emptying digesters, repairing lead pipes in digesters, etc.—A. P.-C.

Specifications Recommended for Lime for Cooking Rags.—*Pulp and Paper,* xviii 875-876 (Aug. 19, 1920); *Paper,* xxvi, No. 25, 16, 25 (Aug. 25, 1920).—Specifications recommended by the U. S. Bureau of Standards covering, definitions, quality, composition, packing, marking, sampling, testing, and retesting. A brief summary is given of the analytical methods recommended. For more complete information on this subject reference should be made to "The Analysis of Silicate and Carbonate Rocks," W. F. Hillebrand, U. S. G. S. Bull. No. 700. (See also *Pulp and Paper,* xviii, 438, A-7, Apr. 22, 1920.)—A. P.-C.

Determination of the Acidity of Alum Solutions.—I. Bellucci and F. Lucchesi. *Gazz. Chim. Ital.,* lxix, 216-241 (July 10, 1919); *Paper,* xxvi, No. 25, 17 (Aug. 25, 1920).—Translation by A. Papineau-Couture. See this journal, lxxii, No. 12, p. 50, March 17, 1921.—A. P.-C.

The Rosin Size Industry.—R. Thindon. *Papier,* xxiii, 145-146 (July 1920).—Recent progress in the chemistry of rosin sizing has shown that the action is probably due to free rosin, but that the latter must be protected by a film of aluminium hydrate or aluminium resinate; and also that all rosins are not equally suitable for the preparation of rosin sizing. This, together with the conditions arising from the war, gave rise to the rosin size industry, which so far has given satisfaction and has most likely come to stay.—A. P.-C.

Rags and Waste Paper.—J. Micol De Portemont. *Papier,* xxiii, 147-151 (July 1920).—A discussion of the necessity of a more widespread collection of rags and waste paper in France and of their more careful classification, showing that the dependence of France on foreign countries for paper making fibers would be very greatly reduced thereby, especially as

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regards pulps for the manufacture of news print. The compositions of a large number of furnishes in which waste paper is used are given (taken from Jas. Strachan's "Recovery of Waste Paper"). The classification of waste papers as practised by the "Etablissements Blanchet," Paris, is also given.—A. P.-C.

Factors Controlling the Distribution of Douglas Fir in Semi-Arid Regions of the Northwest.—Floyd W. Gail. *Ecology,* ii, 281 (Oct., 1921).—Low moisture content of the soil is considered the greatest factor in preventing the growth of Douglas fir on south-west slopes. Reduced light under the cover of Douglas fir is the chief factor in causing the disappearance of yellow pine from the north and north-east slopes.—C. L.

West Organizes to Combat Blister Rust.—*Timberman,* xxiii, 33 (Jan., 1922).—Report of the White Pine Blister Rust Conference held at Portland, Oregon, Dec. 19 and 20, 1921, to consider ways and means of preventing the disease from reaching the white pine forests of the Inland Empire and Eastern British Columbia and the sugar pine regions of Southern Oregon and California. See also "Facts About White Pine Blister Rust," *Ibid,* p. 35.—C. L.

Slash Disposal in the Yellow Pine Region.—James W. Girard, Logging Engineer. *Timberman,* xxiii, 39 (Feb., 1922).—Describes and discusses methods of disposal of logging slash in the yellow pine region of the Western States, from the viewpoint of reducing the fire hazard. A cut-over area was examined on the operations of the Polleys Lumber Co. near Roman, Montana. This sale area is on the Flathead Indian Reservation. It was necessary for the swampers to handle a large portion of the brush in the process of swamping, and they were able to pile a large portion of this without any additional expense, in such a manner that a fairly good burn could be accomplished when conditions were such that the fire would not spread over the entire area. "If common sense and judgment are used in burning, very satisfactory results can be accomplished for a cost not to exceed from five to fifteen cents per thousand feet. The burning on practically all of the area in question was done when fire would not run from pile to pile. It is safe to say that at least 85 per cent of the brush has been burned, and 90 per cent of the reproduction and advance growth left undamaged." It is concluded that this method of brush disposal will not increase the cost of logging more than 10 to 20 cents per thousand, over broadcast burning, and will give much better results from a protection point of view.—C. L.

Dry Kilns a Saving to the Industry.—H. S. Newins, Prof. of Forestry, Oregon Agricultural College. *Timberman,* xxiii, 39 (Feb., 1922).—A description of the efficient and economical results in drying lumber by the use of modern dry kilns.—C. L.

Topographic Surveys for Logging Operations.—J. A. Wright. *Pac. Coast Lumberman,* vi, No. 2, 29 (Feb., 1922).—C. L.

Burning Over Forested Areas for Grazing.—*Pac. Coast Lumberman,* vi, No. 2, 35 (Feb., 1922).—A discussion of the question as to whether the production of timber or the promotion of the grazing industry will represent the highest use to which lands in certain sections of Western Canada may be devoted. In some sections, burning operations have been advocated in order to keep down forest reproduction and thus increase the value of the land for purposes of grazing. The conclusion is that absolute protection from fires is in the interest of the grazing industry as well as in that of forestry.—C. L.

The Purpose and Plan of Forestry Work.—C. D. Howe, Dean, Faculty of Forestry, Univ. of Toronto. *Can. Lumberman,* xlii, No. 1, 49 (Jan., 1922).—An address delivered before the Foresters Club, Toronto. Describes the object of forestry, the necessary qualifications of a successful forester, the functions of individual trees, and the inter-relationships which exist between the trees and other plants which comprise a forest community. Effect of soil upon the composition of the forest, and the reaction of the forest upon the soil. We have in Canada about 1,900,000 square miles of soil covered with forest, or over one billion acres. Of this, from two-thirds to three-fourths has been burned over during the last 75 years. Fire protection is the most important problem in forestry policy today; in fact it is one of the most important economic problems facing Canada at the present time. Enormous areas of former pineries in Ontario will have to be planted up artificially, if this type of forest is ever to exist again on those areas. "What would it mean to Canada if all our twelve hundred million acres of absolute forest soil were fully stocked with commercial trees, adequately protected from fire and managed for continuous production? What would the resources from such forests mean in terms of reduced taxation, in furnishing the financial aid in the building of highways, the endowment of schools and universities, the founding of hospitals and libraries?"—C. L.

Annual Meeting of the Canadian Forestry Association, Toronto, Jan. 10, 1922.—*Can. Lumberman,* xlii, No. 2, 51 (Jan. 15, 1922).—Brief summary of proceedings, including list of officers elected for the ensuing year. Reference to address of Premier Drury of Ontario, in which the statement is made that three hundred and fifty million feet of pine are cut in the province each year, or one hundred million more than is replaced by natural growth. At this rate in 35 years the virgin forest will be exhausted. The remedy is to grow trees. Mr. Drury stated that plans are under way for the inauguration of an extensive planting policy by the Province, involving the reforestation of ten thousand acres each year. The cost of the program per annum would be about $200,000, and if the program were carried out, within 50 years the growth would amount to fifty million feet per year more than the present annual cut. —C. L.

Wanton Waste of Canadian Timber Must Cease.—Frank J. D. Barnjum. *Can. Lumberman,* xlii, No. 4, 39 (Feb. 15, 1922). —Emphasizes the extremely serious situation with regard to pulpwood supplies in Eastern Canada. Heavy damage by spruce budworm and by forest fires. Advocates that the Canadian pulp and paper companies should reduce the cut on their own lands as near one-half as possible; insist on an embargo or export tax of not less than $10 per cord on fee land wood, so as to save for the mills of Canada the large amount of wood that is being shipped out of the country; insist upon more and better fire protection, the burning of all slash, the utilization of every inch of the tree that is cut down; improve present wasteful logging methods, and insist upon reforestation on a large scale. Shows that the situation in the United States is such that Eastern Canada must inevitably be called upon to furnish very large amounts of pulp and paper for the American market. Emphasizes particularly the necessity for an embargo or export duty on privately-owned pulpwood of which over one million cords per year are now being shipped from Canada to the United States. Also *Pulp and Paper,* xx, 59-60, 71 (Jan. 26, 1922).—C. L.

New Zealand Forest Service, Annual Report for Year Ending March 31, 1921.—L. M. Ellis, director of forestry. Forestry agitation in New Zealand dates back to 1874, but with comparatively small actual progress until the recent establishment of the State Forest Service. There is now a definite forest policy, an administrative organization, and the dedication to technical management of forest and woodlands totaling 6,800,000 acres, or 10.3 per cent of the total area of the Dominion. A district organization has been made effective, and experts employed for several lines of work. There are still at least 4,000,000 acres of undedicated Crown and Native forest land

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which should be added to the State forests, in the interests of hydro-electric development, irrigation, municipal water supply, regulation of stream flow, and the stabilization of the climatic balance on the lower fertile plains. Unregulated logging and forest fires have already caused enormous damage. The total forest revenue for the year was 45,162 pounds, of which 19,697 pounds is credited to State Forest Revenue, and 25,465 to Crown Land Timber Revenue. The State forest expenditures were 79,551 pounds. Of this expenditure 80 per cent was for afforestation. There are large areas of forest lands under the control of interests other than those whose objective is conservation and rational use. During the past generation, 2,500,000 acres of virgin forest has been rendered a barren waste by fires; over 50,000 acres were burned over during the fiscal year. During the year 2,877,954 trees were planted on 1,381 acres, bringing the total area reforested from 1896 to 1921 up to 38,462 acres. Over 456,000 seedlings and 240 pounds of tree seeds were disposed of during the year to farmers and soldier settlers. A forest products laboratory is needed to study the qualities of the native woods. Sylvicultural research has been inaugurated to form a basis for future forest management. The establishment of a school of forestry is strongly recommended. The New Zealand Forest Service has made an excellent start towards the adoption of a rational forest policy and it is to be hoped that its future progress will be both steady and consistent.—C. L.

P-Cymene as a Solvent.—A. S. Wheeler. *J. Am. Chem. Soc.*, xlii, 1842-1846 (1920).—The price of *p*-cymene has decreased so much since it has been discovered to be the main constituent of *sulphite turpentine* that it should be placed on the regular list of solvents. It is of importance as a solvent because it is a hydrocarbon of high boiling point (176.5° C.) and, where possible, should be preferred to such colored solvents as aniline or nitro-benzene or an evil smelling one like pyridine. In its purification the sulphur dioxide is best removed by drawing air through it (10 hours for 5 gallons); it is then distilled with superheated steam, the vapors being passed through 30 per cent sodium hydroxide solution before they are admitted to the condenser, and the distillate is shaken with 5 per cent sodium hydroxide and finally distilled over sodium. The solubilities of a large number of organic compounds in *p*-cymene are given.—A. P.-C.

The Effect of Sulphite Cellulose Waste Liquor on the Sewage of Königsberg.—F. Schutz. *Z. Hyg. Infections krankheiten*, lxxxvii, 185-241; *Chem. Abs.*, xv., 1179 (April 20, 1921).—Sulphite waste liquor mixed with Königsberg sewage in the ratio of 1 to 13 increased the oxygen consumption from 580 to 4,550 mg. per liter, and caused an intolerable nuisance from odors. Dilution with 3,000 volumes of fresh water was required to obtain stability.—A. P.-C.

What Forest Conservation Means to National Prosperity.—Wm. B. Greeley. *Paper*, xxvi, No. 23, 13-15, 28 (Aug. 11, 1920).—A discussion of the importance of timber to a nation, and of the terrible inroads made into the forest wealth of the United States, which is using its resources many times as fast as they are being replenished by Nature. "The answer to the forestry problem of the United States is not to use less wood but to grow more—to put our idle acres of burned and logged-off timber land at work growing trees. This is not inherently a difficult thing to do. Three-quarters of it lies in preventing forest fires. But it does require an aggressive national policy of reforestation.—A. P.-C.

Volumetric Measurements of Pulp Wood.—*Chem. Met. Eng.*, xxv, 704 (Oct. 12, 1921).—A brief description of the apparatus used at the Forest Products Laboratory (Madison, Wis.), for determining the volume of sticks of pulpwood by immersion in water.—A. P.-C.

Methods of Bleaching Paper Making Fibers.—Frank. *Papeterie*, xlii, 544-548 (June 25, 1920); *Paper*, xxvi, 24, 11-2 (Aug. 18, 1920).—Translation by Paul Bartholow. See this journal, lxxii, No. 12, p. 48, arch 17, 1921.—A. P.-C.

Developments in Slitting Machinery.—*Paper*, xxvi, No. 24, 28, 30 (Aug. 18, 1920).—The principle of rewinders is very briefly described and attention is drawn to the latest type of rewinder of the Cameron Machine Co., Brooklyn, N. Y.—A. P.-C.

Raw Materials for Fiber Board.—Geo. R. Browder, general manager of The Container Club. *Paper*, xxvi, No. 26, 13-14 (Sept. 1, 1920).—According to an investigation by the U. S. Forest Service (Circular 177, May 15, 1911), fiber board is made principally of one or more of four materials. Of the total material reported in the course of the investigation, 57 per cent was chips (old papers, low grade or refuse materials from pulp mills, screenings, and waste of other kinds repulped and used again), 22 per cent straw (ordinary farm straw), 16 per cent wood pulp (partly low-grade short-fibered pulp mixed with other cheap pulp, to which is added a small quantity of long-fibered wood pulp to give the required strength), 5 per cent jute (old rope and bagging). The amount of saving of wood and of freight car space resulting from the use of fiber board containers is discussed.—A. P.-C.

Pasteboard.—W. Fuchs. *Deut. Färber-Ztg.*, lvii, 27-28 (1921); *Chem. Abs.*, xv, 1074 (April 10, 1921).—The resistance of pasteboard depends upon the thickness and upon the presence of compounds with which the pasteboard is impregnated. For the latter purpose copper, aluminum, zinc, and other salts are dissolved in the paste, china clay is added in the solid form, and lead sulphate is formed in the paste by the reaction of soluble lead salts and sulphates. For white pasteboard without lead, the following are recommended: (1) China clay 300 g., water 300, copper sulphate 100, cupric nitrate 50, gum arabic solution (1:1) 350. (2) China clay 400, verdigris 125, gum arabic 175, copper sulphate 175, alum 25; after making this up add potassium dichromate 12 and turpentine 5. (3) China clay 1000, verdigris 300, gum arabic 500, copper sulphate (50 per cent solution) 500, alum 250. In making up (2) and (3) the China clay, verdigris, and gum arabic should be separately treated with water the day before, the verdigris in water acidified with acetic acid. Copper sulphate and alum are dissolved in the hot gum arabic solution. The China clay and verdigris are kneaded together, the solutions are added, the mass is cooled and passed through a sieve. For white or yellow board containing lead use (1) China clay 200, water 200, copper sulphate 100, lead nitrate 100, lead sulphate (50 per cent paste) 200, gum arabic solution (1:1) 200, or (2) China clay 60, verdigris 30, alum 20, copper sulphate 20, lead nitrate 50, lead acetate 40, gum arabic solution (1:1) 25. This should be compounded like Nos. 2 and 3 above, then the lead nitrate and lastly the lead acetate added. Recipes with detailed directions are given for the preparation of yellow, orange, green, olive, red and blue resists.—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals From Which Abstracts Have Been Prepared for This Issue

Can. Lumberman	Canada Lumberman. 347 Adelaide St., W., Toronto, Ont.
Chem. Abs	Chemical Abstracts. Chas. L. Parsons, 1709 G St., N. W., Washington, D. C.
Chem. Met. Eng	Chemical and Metallurgical Engineering, Tenth Ave. at Thirty-sixth St., New York City.
J. Am. Chem. Soc	Journal of the American Chemical Society. Chas. L. Parsons, 1709 G St., N. W., Washington, D. C.
Pac. Coast Lumberman	Pacific Coast Lumberman. 702 Pacific Bldg., Vancouver, B. C.
Paper	Paper. 251 West Nineteenth St., New York City.
Papeterie	La Papeterie. 9, Rue Lagrange, Paris (5°), France.
Papier	Le Papier. 16, Rue Du Rocher, Paris (8°), France.
Pulp and Paper	Pulp and Paper Magazine of Canada. Gardenvale, Que.
Timberman	Timberman. 616 Spalding Bldg., Portland, Oregon.

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Prepared By Clarence J. West, Chairman, Committee on Bibliography, Tappi.

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WIRE SAVING BY THE USE OF BALL BEARINGS

By John Kepke, Jr.*

Drag in the bearings on the various rolls of a Fourdrinier part is an important factor in straining wires and shortening wire life. The solution of this difficulty lies of course in the elimination of plain bearings, and the use of ball bearings instead.

In one case two somewhat similar high speed machines in the same mill, one equipped with ball bearings and the other with plain bearings, were closely observed to determine the wire saving resulting from the use of the ball bearings. The life of wire on the plain bearing machine averaged about 12 days; while the average on the ball bearing machine was about 25 days. This indicates a most substantial economy in favor of ball bearings even after making allowances for any other influences which may have escaped attention.

While similar information from other mills, based on such comparative tests, is not available, a number of mill men have expressed themselves as being convinced that increased life of wire has followed the installation of ball bearings in Fourdrinier parts.

The breast roll is probably of most importance in this respect because of the large angle of wire wrap and because of comparatively heavy pressures in the bearings. This applies particularly when the wire is occasionally run fairly taut.

On the other hand the number of wire carrying rolls and the difficulty of lubricating plain bearings under a constant heavy splash of water are important factors in straining the wire on its return path under the table. All the wire rolls should therefore be mounted on ball bearings in order to get the full advantage of reducing wire strain by elimination of friction.

Since the wire merely rests on the table rolls, and there is no appreciable angle of wrap, these rolls will not wear the wire so long as they turn freely. However, it is unusual to see every table roll turning when the rolls are furnished with plain journals; while it is most unusual to see a table sticking when mounted on ball bearings. It is this consideration which has already popularized ball bearings for table roll service.

The wear on the wire at the couch rolls depends on the pressure between the rolls. When the levers are heavily weighted the frictional drag in the bearings of the top roll may be a factor in hastening wear on the wire. For this reason, and to prevent a dragging action between the paper and the jacket, it is desirable to have top couch rolls mounted on ball bearings.

Inasmuch as the bottom couch roll is mechanically driven there will be no wire saving effected by equipping it with ball bearings, although other advantages would justify the application. The same consideration applies to suction couch rolls; although here the other advantages will be more pronounced, due to the high peripheral rubbing speed in the large diameter bearings.

The various factors considered throughout this outline of the effect of bearing friction on wire life indicate clearly the value of ball bearing equipment for Fourdrinier parts. If all the rolls turning under the pull of the wire are mounted on ball bearings, the wire will have a decidedly increased length of life and there will be fewer emergency shut-downs from wire failures.*—*S. K. F. Industries*, New York.

American Writing Mills Resume

[FROM OUR REGULAR CORRESPONDENT]

Holyoke, Mass., July 10, 1922.—Three mills of the American Writing Paper Company in this city resumed operations today. These mills were the Gill, Wauregan and Norman. Three hundred paper makers were given employment. An official of the company today said that business was booming and that the mills of the company are running 70 per cent better this year than for a corresponding period last year. This official also said that prospects for the future were very bright. Salesmen's reports show that the paper business is strengthening all through the country. "Our mills are doing as much as any group of mills in the valley, and business in our line looks better than ever," said this official.

Rogers Fibre Co. Damaged by Fire

[FROM OUR REGULAR CORRESPONDENT]

Minot, Me., July 10, 1922.—Fire destroyed the power plant of the Rogers Fibre Company, at Minot Corner last week, causing a loss of about $8,000. The building was a one story wooden structure on the banks of the Androscoggin river. W. T. Kilgore, manager of the company, states that the cause is unknown. Operation of the plant will not be interrupted by the fire as electric current will be furnished for the dynamo in the mill from outside. The water wheels were in operation at the burned power plant until the structure was consumed.

LaBour Resigns Position

[FROM OUR REGULAR CORRESPONDENT]

Wisconsin Rapids, Wis., July 10, 1922.—G. F. LaBour, secretary and manager of the Ahdawagam Paper Products Company, of this city, has resigned his position and will move from the city. Mr. LaBour has made no announcement as to his future plans. He has been connected with the concern for several years.

H. G. Ingraham Goes With V. D. Simons

[FROM OUR REGULAR CORRESPONDENT]

Rothschild, Wis., July 10, 1922.—Harold G. Ingraham, formerly construction engineer for the Marathon Paper Mills Company, has resigned his position to go with V. D. Simons, architect and engineer, of Chicago.

XUM

CHEMICAL ENGINEERING EDUCATION

An interesting and extremely illuminating report on chemical engineering education has recently been made by a committee of the American Institute of Chemical Engineers. This committee was composed of such well known men as Arthur D. Little, Chairman; Joseph H. James, Ralph H. McKee, Charles L. Reese, James R. Withrow, and Albert W. Smith. It made a study and analysis of the courses offered by seventy-eight institutions of the United States. Abstracts of the report and the findings of the committee are as follows:

"Your committee has had the benefit of careful study of the report of Professor Charles Riborg Mann on Engineering Education in the United States, published by the Carnegie Foundation for the Advancement of Teaching, and would call attention to the extracts therefrom.

"The present arrangement, under which the fundamental sciences are taught in advance of their applications, is the wrong method of teaching, and that the engineering education will never be satisfactory until theory and practice are taught simultaneously."

". . . Engineering education is likely to be more effective in proportion as it fosters the development of skill in determining the most expedient adjustments among theory and practice and cost."

". . . Lack of good English, of business sense, and of understanding of men are most frequently mentioned by practising engineers as points of weakness in the graduates of the (engineering) schools."

". . . Personal qualities, such as common sense, integrity, resourcefulness, initiative, tact, thoroughness, accuracy, efficiency, and understanding of men are universally recognized as being no less necessary to a professional engineer than are technical knowledge and skill."

"The invention and perfection by experiment of objective tests of ability seems to offer the most promising road to progress toward a type of instruction that places less emphasis on information and more on ability to use information intelligently."

The committee believes, with Professor Mann, that any general plan for the reorganization of chemical engineering courses should be based upon an analysis of chemical engineering practice into its three essential factors: namely, knowledge of engineering science, skill in technique of application, and judgment in the appraisement of values and costs, and that "the balancing of value and cost is the controlling factor in all intelligent production."

It is perhaps not out of place in this connection to refer to the new School of Chemical Engineering Practice of the Massachusetts Institute of Technology as embodying an important advance in chemical engineering education.

As the result of this study of chemical engineering courses now offered in this country, your committee has come to the following specific conclusions:

1. An undesirable multiplicity of subjects is now included in courses in chemical engineering.

2. Wherever possible, it is desirable to avoid splitting major courses into a number of minor courses.

3. Any course in chemical engineering should provide, as the background for specific instruction in chemical engineering as such, strong courses in chemistry, physics, mathematics, and mechanical engineering.

4. As preliminary to the desirable reorganization of chemical engineering courses, steps should be taken to secure agreement on the nomenclature concerned with the subjects involved.

5. A much closer agreement in the weighting of the various courses as to clock and credit hours is urgently needed in those institutions giving courses in chemical engineering.

6. The committee would omit from chemical engineering curricula courses in civil engineering, sanitary engineering, industrial engineering, mining engineering (except geology), electrical engineering beyond its fundamentals, which should include the instruction required for the selection and operation of motors.

7. It is desirable to avoid specialization by industries in the four-year course in chemical engineering. When specialized training is offered the specialized subjects should preferably be segregated as post-graduate work. This applies to such subjects as Petroleum Technology, Sugar, Cellulose Technology, Fuels and Oils, and Refrigeration.

8. The foregoing under No. 7 does not imply that the committee does not favor the offering of specialized courses by the smaller institutions or those formulating their courses to meet a local and specialized demand, but it is desirable that such specialized courses be clearly differentiated from chemical engineering courses as such. The committee believes it to be desirable that institutions favorably located and conditioned offer four-year courses designed to train specialists in Fuel Engineering, Petroleum Technology, Sugar Technology, and the Technology of Cellulose, etc., but that these should not be offered as General Chemical Engineering courses.

9. The committee considers a thorough grounding in English and a reasonable familiarity with English literature essential to the adequate training of the chemical engineer and regards English as one of his most effective working tools. It recommends a special course in report writing and the oral presentation of projects.

10. The committee recommends that a "Source of Information" course be provided for the first part of the last year of the chemical engineering course. This specialized course should familiarize the student with patent literature, governmental reports, bibliographies, trade catalogues, abstract journals, publications of societies, the resources of libraries, and the activities of scientific and technical organizations throughout the world.

11. To students the committee recommends that wherever possible, they should precede their engineering studies by three years of general college training, in which special emphasis is given to mathematics, physics, chemistry, English, and economics, with the idea of obtaining a broad foundation for their professional study and of entering upon this study at greater maturity and with presumable reduction of time required for their professional courses.

12. The committee wishes to emphasize the fact that the chemical engineering profession is a difficult one and that, accordingly, a thorough and broad preparation for entrance should be insisted upon by institutions offering courses in chemical engineering.

13. The committee recommends that technical schools and professional schools of universities arrange their courses so that properly qualified college graduates may secure a professional degree at the end of a two-year course.

14. The committee deprecates the use of undergraduates or even graduate students as major instructors (instructors of laboratory sections or quiz sections) in charge of classes of chemical engineers, even in the freshman year.

New Maine Concern to Deal in Pulpwood

[FROM OUR REGULAR CORRESPONDENT]

AUGUSTA, Me., July 10, 1922.—The Eastern Pole Corporation has been organized in Skowhegan to deal in pulpwood and lumber, with authorized capital stock of $10,000 none of which is paid in; par value, $100. Officers are Norman B. Murphy, president, Augusta; Arthur E. Moore, treasurer, Portland and Lauriston E. Howes, clerk, Lexington, Me. These officers also constitute the board of directors.

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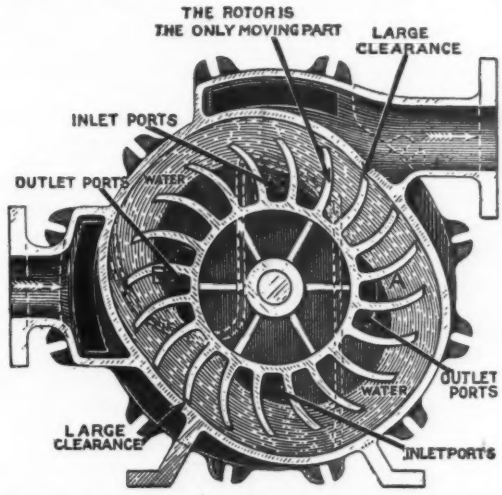

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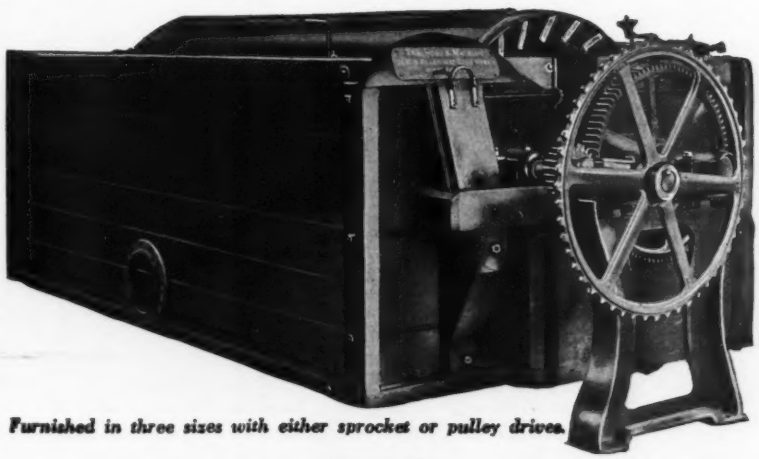

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Obituary

George B. Holbrook

HOLYOKE, Mass., July 10.—George B. Holbrook, formerly treasurer of the American Writing Paper Company of this city, died early the morning of July 6, at the Holbrook summer home at Hyannisport. Mr. Holbrook was one of the best known retired business men of Springfield and lived at 76 Maple street in that city. He was apparently in the best of health on the night before he died and his death, which was attributed to heart disease, came to his friends as a surprise and a distinct shock.

Mr. Holbrook left Springfield about three weeks ago accompanied by Mrs. Holbrook and their daughter, Miss Emma Holbrook, to spend the summer at their Hyannisport home.

Mr. Holbrook was born in Swanzey, N. H., September 13, 1846. He attended school in New Hampshire and later in Springfield. Leaving school he became bookkeeper for Chapin & Gould, clothing dealers of Springfield. In 1861 he joined the 14th New Hampshire regiment and he was mustered out of the service in July, 1865.

In 1871 he organized the Hampden Paper Company in this city, built the mill and did business under the firm name of Beebe & Holbrook. Later he was elected treasurer of the American Writing Paper Company of this city. In 1913 he retired from active business.

Mr. Holbrook at one time was president of the Connecticut River Railroad Company, a former member of the Springfield city council, both as alderman and councilman, and had long been active in the civic and social life of Springfield. At the time of his death he was president of the Mutual Assurance Company of Springfield, a trustee of the Institution for Savings, a director of the United Electric Light Company of Springfield and director of the Indian Orchard Company.

Mr. Holbrook was an ardent sportsman and was a familiar figure on the links of the Springfield Country Club and at the golf club at Hyannisport. He was a lover of good music and was influential in bringing to Springfield some excellent talent. Some time ago Mr. Holbrook had one of the finest pipe organs installed in his Maple street home.

He was a member of the Springfield Country Club, the Nayasset Club, the Oxford Country Club and the Music Festival Association, all of Springfield.

Mr. Holbrook is survived by his wife, Mrs. Ellen (Beebe) Holbrook, a son, George M. Holbrook, two daughters, Emma of Springfield and Mrs. Elinor (Holbrook) Ward of Boston, who is abroad at the present time, two granddaughters, Mrs. J. A. Campbell of New York city and Mrs. W. E. Kaskell, Jr., of Springfield and four great grandchildren.

The funeral was held Friday afternoon from the home in Springfield, Rev. James Gordon Gilkey officiating. The honorary bearers were Robert W. Day, Andrew B. Wallace, A. W. Gilbert, W. C. Godfrey, H. E. Hine, Henry W. Bowman, Judge Charles L. Long, W. N. Caldwell and Henry H. Skinner. The active bearers were William H. Sargeant, Harry G. Fisk, Alfred Leeds, Walter J. Mulligan, John W. B. Brand, F. H. Sturtevant, E. H. Hall and E. T. Tifft. The body was cremated.

Photographers to Meet at Chemical Exposition

In the recent formation of the Technical Photographic and Microscopical Society, composed of many well-known chemical engineers, physicists, and mathematicians, the textile, paper, leather, rubber, metal and paint industries of America will undoubtedly find a solution of many of their problems. Unified effort among the leaders in micro-photographic work has long been lacking in the United States, and the first meeting of the new society held the middle of last month in New York, marked the initial step in broadening the field of photography in the leading chemical consuming industries.

The next regular meeting of the new technical photographic society will be held in conjunction with the Eighth National Exposition of Chemical Industries during the week of September 11-16, at the Grand Central Palace, New York, on Thursday afternoon, September 14. In addition to meeting, the organization has already made arrangements for the display and explanation of the work of individual members in technical micro-photography and its application to the every-day problems of the chemical or chemical consuming plant. A booth at the exposition has been reserved for the purpose. A. E. Buchanan of the Mc-Graw-Hill Company, New York, is chairman of the general committee on exhibits.

Among those who are expected to be heard at the Chemical Exposition meeting of the society, are Dr. C. E. Kenneth Mees, of the Eastman Kodak Company; John H. Graff of the Brown Company, Berlin, N. H.; Susan B. Leiter and Dr. W. H. Whitney, of the General Electric Company; Henry Green of the New Jersey Zinc Company, and other micro-photographic authorities. Other associations, announcement of whose meetings in conjunction with the Chemical Exposition has already been made, who are lining up their programs for the September gatherings, include the Salesmen's Association of the American Chemical Industry, the American Ceramic Society and the Technical Association of the Pulp and Paper Industry. Later announcements of the programs of these societies will be made.

Bids and Awards for Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 12, 1922.—The purchasing officer of the Government Printing Office will open bids on July 17, for 20,000 lbs. (20,000 sheets) of 26 x 38—No. 50, strawboard.

The purchasing officer of the Government Printing Office has received the following paper bids:

4,100 lbs. 17 x 28—20½ No. 16, White Glazed Bond Paper: The Ætna Paper Company, at $.1273 per lb.; Whitaker Paper Company, $.1297; R. P. Andrews Paper Company, $.20; Dobler & Mudge, $.142; Bargain Paper Company, Inc., $.20, Old Dominion Paper Co., $.1674.

8,000 lbs. 36 x 48" Gray Pressboard: Mathers-Lamm Paper Company, $.099 per lb.; R. P. Andrews Paper Company, $.0972; Whitaker Paper Company, $.149; Philip Rudolph & Son, Inc., $.12; B. F. Bond Paper Company, $.109; Maurice O'Meara Company, $.1033; Dobler & Mudge, $.11; Bargain Paper Company, Inc., $.121.

Dobler & Mudge have been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 3,700 lbs. (50 reams) of 24 x 38—74 rope manila paper at $.1099 per pound, bids for which were opened on June 29.

The Navy Department has announced that bids will be received on July 25, at the Washington Navy Yard for surplus carbon paper held by the Navy. The material is located on the Atlantic and Pacific Coasts.

Postpone Sale of Eagle Paper Co.

RICHMOND, Va., July 1, 1922.—Instructions to defer indefinitely the sale of the Eagle Paper Company's property at 1400 West Marshall street for federal taxes have been received by John C. Noel, collector of internal revenue, from the revenue commissioner in Washington. Sale of the property had been advertised to be held recently.

Collector Noel said that the property and affairs of the company are now in the hands of the United States district court, Robert N. Pollard, of Richmond, having been appointed temporary receiver by Judge D. Lawrence Groner as a result of the suit brought in that court by Emma G. Shuttleworth, of New York.

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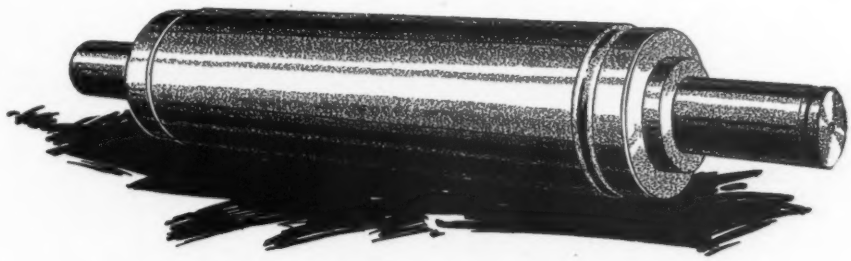

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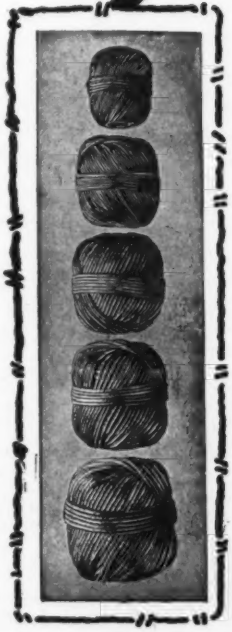

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WEAR BETTER CLOTHES—No. 162,058. Arthur R. Rapp Company, Chicago. For wrapping paper, bond paper, and cover paper.

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WHALEBONE—No. 161,883. Charles F. Hubbs & Co., New York. For paper from which patterns are made.

K.-B.—No. 157,994. The Flintkote Company, Boston, Mass. For sheathing and building paper.

German Paper in Argentine

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., July 10, 1922.—The present condition of the Argentine paper market is fully discussed in the following report which the Department of Commerce has received from Trade Commissioner Brady, at Buenos Aires.

Due in some measure to the higher prices of American paper resulting from the unfavorable rate on the dollar, German paper of all kinds has again come into prominence in the Argentine market. Before the war Germany was the principal competitor of the United States in supplying paper and paper products to the River Plate countries, and on account of lower prices was far ahead of the United States in some lines, such as cardboards, wrapping, writing, and tissue papers. Even before the rise in dollar exchange (about the middle of 1920), Germany and other European countries by reason of lower quotations had begun to regain their position in this market.

The principal kinds of paper imported into Argentina, in order of importance, are news print, book, cardboard, writing, and wrapping paper. In 1920 the total importation of these five items was 65,000 metric tons—a little less than half of which came from the United States. American products practically controlled the book paper and writing paper markets in 1920, though this trade had been in the hands of the Germans before the war.

At the present time Canadian, Finnish, Swedish, and German papers of all kinds are being offered in quantity on the market at prices 30 per cent lower than the American papers, and to a lesser degree Dutch, English, French, and Czechoslovakian papers are offered at very favorable prices. Some paper is coming from Japan, but it consists chiefly of wrapping paper and of such paper products as blank books and paper napkins. The three largest American importers in Buenos Aires are now handling European papers because of their lower prices.

Stocks of paper in the country are not large. The importers are buying with caution and usually to fill immediate orders, as the fluctuating exchange rates make prices uncertain from day to day. Consequently the question of delivery has lately been an important one, particularly in sales of news print, for which in certain cases prices somewhat higher than the ordinary market prices are paid in order to obtain quick delivery. European houses have been offering 60 and 90 day credits. Fully 98 per cent of all imported paper enters through Buenos Aires and is handled by houses in that port. One or two houses in Rosario sometimes import paper direct.

The local paper mills are operating at normal capacity, producing cardboard and printing and writing papers, which are protected by the customs tariff. The total production of all the mills in Argentina is estimated at less than 125 metric tons daily. Two small factories in Buenos Aires are manufacturing carbon paper and considerable quantities of such paper products as blank books, boxes, postal cards, envelopes, and paper streamers are now manufactured in Argentina. The importation of these articles has been decreasing.

Discuss Work of Paper Laboratory

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 11, 1922.—A two days' conference opened here Monday between officials of the Bureau of Standards and the Advisory Committee from the paper industry for the Paper Section of the Bureau. The conference was in executive session, but it is understood that the work now in progress and future work of the paper laboratory were discussed.

Discussion was also held of the definitions of terms applied to paper and the matter of the simplification of sizes and qualities of paper. A report was also read of the technical committee regarding specifications and quality and the testing of paper. An outline of the proposed research work of the paper laboratory of the bureau was read for the fiscal year which began on July 1, and criticism of the outline was invited. The two systems of the classification of paper for use in collecting statistics were also taken up. Among those attending the conference in addition to Mr. Curtis, chief of the paper laboratory, and Dr. S. W. Stratton, director of the Bureau of Standards, were: A. H. Nevius, vice-president, Miami Paper Company, West Carrollton, Ohio, chairman; George A. Galliver, president, American Writing Paper Company, Holyoke, Mass.; M. E. Marcuse, president, Bedford Pulp and Paper Company, Richmond, Va.; R. Frank McElwain, vice-president, Crocker-McElwain Company, Holyoke, Mass.; H. E. Fletcher, president, Fletcher Paper Company, Alpena, Mich.; R. S. Hatch, Hamersley Manufacturing Company, Garfield, N. J.; Fred C. Clark, general manager, Pejebscot Paper Company, Brunswick, Me.; Frank L. Stevens, president, Stevens & Thompson Paper Company, No. Hoosick, N. Y.; H. W. Stuart, The U. S. Paper Goods Company, Cincinnati, Ohio; Alexander Gilman, Allied Paper Mills, Kalamazoo, Mich.; W. J. Raybold, B. D. Rising Paper Company, Housatonic, Mass.; O. M. Porter, assistant secretary, American Paper and Pulp Association, New York.

Improvement at Marathon Paper Mills

ROTHSCHILD, Wis., July 10, 1922.—The bricklayers have the new beater room walls at the plant of the Marathon Paper Mills Company practically completed, ready for floors and roof. This is going to give us considerable more train shed as it will now be possible to spot six cars in the shed, whereas there formerly was room for only four. The wall between No. 4 machine and the train shed has been taken out and steel supporting columns erected which allows more freedom of action around the machines and makes better ventilation possible. The supercalenders have been moved and erected in the finishing room where they are running better than they ever did before.

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AMERICAN WELDING COMPANY
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Felt Test—Lowest Cost per Ton

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In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

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Recent Incorporations

E. W. TWITCHELL, manufacture paper, $60,000; Earl Twitchell, Haddonfield, N. J.; E. J. Chatterton, Dealco, N. J.; Thomas McKerna, Philadelphia. Capital Trust Co. of Delaware.

UNITED STATES PAPER COMPANY OF NEW JERSEY and an office at 15 Exchange Place, Jersey City, and Frank W. Hastings, Jr., as agent. Capital stock authorized $100,000, with $1,000 paid in by the following incorporators, all of the company's address, shares being $10 each; Robert P. Gilman, 98 shares; Frank W. Hastings, Jr., and J. Frank Finn, each one share.

LAWRENCE AUTOMATIC HAT BOX MACHINE COMPANY, INC., Wilmington, Delaware. Manufacture of automatic paper box making machines; capital, $1,000,000.

LEEDSMERE CORPORATION, Wilmington, Delaware, manufacture paper mill machinery, capital, $100,000. Corporation Service Company.

BERKSHIRE COATED PAPER COMPANY, Great Barrington, Massachusetts; capital, $75,000. Incorporators, George A. Stevens, Great Barrington, Arnold A. and Jeremiah Whitehouse, Springfield, Massachusetts.

McQuillen Associates Have Outing

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 10, 1922.—The annual outing of the firm of A. Storrs & Bement Company, Federal street, one of the oldest paper houses in Boston, was held the latter part of June at Nantasket Beach. The McQuillen Associates, a mutual benefit association of the employees of the company had charge of the affair and had as its guests the directors of the company including F. P. Cummings, president; W. F. McQuillen, treasurer; Bryant McQuillen, assistant treasurer, and W. B. Stevenson, vice-president and secretary.

Other guests included E. L. Cummings, manager of the Providence, Rhode Island store and Samuel Gottleib, attorney. More than one hundred members of the association were present and spent one of the most enjoyable times in the history of the store.

Sports consisting of a relay race between the teams composed of equal numbers of boys and girls, fat men's race, baseball game between the warehouse and sales forces, balloon race, shoe race, centipede race, Uneeda Biscuit Whistling race, Smokers' contest, tape race, quoits, three-legged race, and tug-of-war were run off by the sports' committee.

After the games a fine dinner at the Nantasket Hotel was enjoyed by every one of the members of the party and the evening was spent in the amusements of Paragon Park which included a roller coaster, the Red Mill, rolling waves, and numerous other beach attractions including dancing.

The trip was made back to Boston on the night boat, the party enjoying the moonlight sail up the harbor.

John Carter & Co. Send Out Bond Samples

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., July 10, 1922.—One of the finest of samples of bond paper seen on the market for some time is that sent out by the firm of John Carter & Co., Atlantic avenue, Boston, advertising Active Bond, manufactured by the Collins Manufacturing Company of Holyoke, Mass.

The booklet has been sent to all of the company's customers in New England who are on the mailing list. In the booklet are given eleven colors and four whites.

The colors come in two different weights while the whites are in four weights.

The Active Bond is known throughout the country as "a splendid utility sheet." The John Carter & Co., people are the selling agents for the paper in New England and report good sales on it in spite of the summer conditions and the quietness of the trade.

News of the Wisconsin Trade

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., July 10, 1922.—Construction of the great dam on the Spirit river, near Tomahawk, was started last week by the Wisconsin Valley Improvement Company. The work will require at least six months to complete. The dam will be near the new Pride Pulp and Paper Company plant. W. P. Ireland, superintendent of construction at the paper mill, will superintend building of the dam.

The dam, including the gates, will be about 2,000 feet long and will raise the level of the river 14 feet above the present mark. It will be necessary to raise several bridges and roads near the river.

About 1,600 acres of land will be flooded by the reservoir created by the dam. This reservoir will contain about 500,000,000 gallons of water. The water will back up about nine miles.

Karl Mathie, Wausau, prominent in the Wisconsin paper industry, has been nominated for governor on the democratic ticket in this State by the democratic State convention. Democrats split in two factions at the convention, the drys nominating Mr. Mathie and the wets concentrating on A. A. Bentley of La Crosse. One of the candidates will be eliminated at the primary election in September. Mr. Mathie long has been an ardent prohibition worker.

News Print Men Against Freight Increase

DAYTON, O., July 10, 1922.—Complaints of several news print, wood pulp and paper companies affected by a proposed increase in the freight rate on paper and wood pulp shipments from Canada to Nashville, Tenn., were heard by John McCord, interstate commerce commission examiner, in Federal court, Saturday.

Decision was withheld.

Among the companies represented at the hearing were the G. H. Mead Company of Dayton, the International Paper Company of New York, the New England Paper and Pulp Company and the Great Northern Paper Company of Boston.

The present freight rate in paper shipments from Canada to Nashville, Tenn., is 52 cents for each hundred pounds. The proposed rate is 63½ cents.

Portland Wants Duty Retained on Wood Pulp

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Me., July 10, 1922.—Portland Chamber of Commerce wired the Maine delegation in the United States Senate last week asking them to support the clause of the tariff bill which places a 5 per cent duty on chemical wood pulp, on account of Portland being located in a section where chemical wood pulp is made. The text of the telegram follows:

"The finance committee after full hearings and consideration of the various interests provided in the tariff bill now before the Senate that chemical wood pulp should bear a duty of 5 per cent. This chamber, being located where chemical wood pulp is made, earnestly urges the retention of the 5 per cent duty."

To Make Wooden Plugs for Paper Rolls

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 10, 1922.—Final tests are being made with a machine invented by H. L. Mumm, Wausau, for manufacturing wooded plugs for paper rolls. The machine is in the plant of the Lincoln Box Company at Merrill and makes five plugs at a time, releasing them automatically from the machine.

It is said manufacture of the plugs is an extensive industry but the high cost of making has been a serious obstacle.

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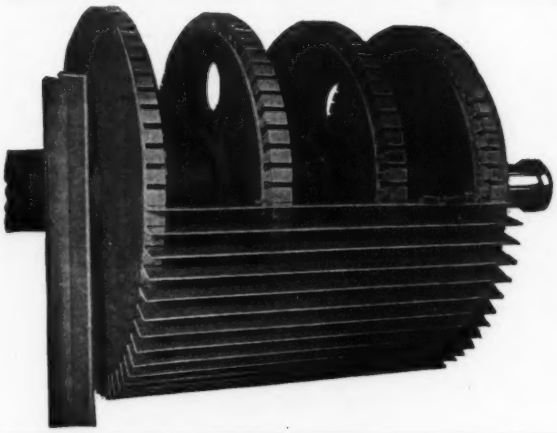

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BEATING and WASHING ENGINES
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May we not tell you about its many advantages?

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Perforated Metal Screens
For Pulp and Paper Mills

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STEEL, COPPER, BRASS, BRONZE and other Alloys

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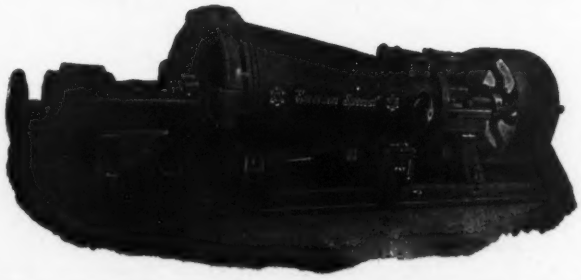

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BEATING ENGINES

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WRITE FOR DETAILS

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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, July 12, 1922.

The week following the Fourth of July holidays has definitely indicated the trend of conditions in the paper market for the summer months. From the transactions which took place during the past week it is apparent that the majority of paper manufacturers will continue to produce full-blast right through the months of July and August. In the news print industry there is no option regarding summer production. Mill agents state that their plants will be kept busy filling the orders now in hand, and several of the largest producers of print paper are not only putting on additional macnines, but are opening mills which have been closed for many months to take care of the large tonnages which consumers require. Several minor branches of the paper industry are feeling the effects of the warm season, true, but paper in general is forging ahead in much greater proportion than it is retrogressing, at least in so far as it is affected by any seasonal variations.

Two strikes, the coal and rail strikes, now loom up as dangerous factors to the industry, and several of the smaller mills already show the effects of the scarcity of coal. Big producers have, in the main, averted an immediate crisis in this respect by laying in adequate supplies to run them until fall. Offsetting these menaces, however, are the much improved labor situation, the diminished competition of European countries in the domestic market, and the greatly improved demand together with the renewed interest which have been apparent in recent weeks.

News print was again the highlight of the paper market last week when the announcement of a $5 per ton increase in price was made. This advance came naturally to meet the increased costs of expanding production, the recent strides in the industry so far surpassing anything in recent years so that the production end has had difficulty in keeping up the pace. News print mills are booked straight through July and August, the period in which city dwellers leave for their vacations and migrate into rural sections, but this slight curtailment in consumption should not greatly affect the boom production which is now going on.

Book paper is moving regularly although consumers' stocks have about reached their low ebb. Buying has continued to be of a hand-to-mouth character right up to the present moment, and this combined with the more and more spotty condition of the export market for book has tended to make conditions look less bright as the summer advances. High cost of printing and keen competition have also had their share in retarding the forward movement in this phase of the paper industry.

Fine papers have also fallen off slightly of late, and Latin-American countries are not demanding the American product in such regular quantities as they did a few weeks ago. Prices remain practically unchanged, but buyers show little interest, feeling that there will be no sharp upturn in the market before they are able to lay in the winter's stocks.

Tissue mills have been hard hit by the coal scarcity, and this problem is ever becoming more menacing. Dealers and mill agents report a fair activity in tissues, considering the season of the year, and predict that in the early fall, when consumers will again be active and interested in the market, the industry will take a marked swerve for the better.

Wrapping paper mills are also watching the coal situation carefully. Swedish and Norwegian wrappings continue to pour in at low prices, and with coal practically impossible to secure in quantity and at a reasonable figure, domestic manufacturers of kraft papers are despairing of being able to compete much longer unless the Government steps in. Consumers are taking up regular amounts of wrapping paper, benefiting usually by the competition between manufacturers, and aside from external influences the market is in a fairly healthy condition.

For several weeks now, the paper box market has been enjoying good business. No price boosts were recorded, but dealers anticipate a general strengthening in all grades of board corresponding with the recent advances in old waste papers. The general tone of the board market has firmed to a great extent and the confidence of buyers is expressed in the increased number of inquiries and orders which have been coming in.

Mechanical Pulp

New York dealers last week stated that manufacturers were laying in supplies of groundwood in large quantities. Both the news print industry and the board industry have come in for their share in recent weeks and competition has been among the buyers rather than among mechanical pulp sellers. For this reason it is generally expected that the next ten days to two weeks will see a slight price stiffening, at least over the dry period in the latter part of July and the first part of August.

Chemical Pulp

Activity in the chemical pulp market has been the order-of-the-week, and dealers report an increase in the volume of business transacted both here and abroad. High grades of bleached sulphite are moving very well, and the demand for Scandinavian pulp in other European countries has done much to check the flood of cheap pulp from Norway and Sweden that was pouring into this country.

Old Rope and Bagging

Most grades of old rope are now so scarce that it is practically impossible to secure a sizeable quantity. Shortly after the general price stiffening which occurred several weeks ago, all available stocks of the commodity were quickly taken up by consumers with the result that the market has firmed immeasurably and good grades of manila rope are in ready demand. No. 1 rope is still quoted up to 6.00 cents a pound and merchants expect a stiffening in all grades before long. The bagging market, on the other hand, is still in a position to amply cover the demand, although the price increases of raw materials would point to a boost in bagging prices as soon as consumers display a more active interest in the commodity.

Waste Paper

With soft white shavings and hard shavings running neck and neck in point of price and the demand for all grades continuing unabated despite the proximity of the market prices to those of soda pulp, waste paper has enjoyed another active week. Prices are steadily strengthening and the positive scarcity of many of the better grades has served to give the market a strong tone. Dealers say that they are able to dispose of waste paper with the greatest facility but that the supplies are restricted and the demand abnormal. Packers are also affected by this shortage and are not too anxious to sell into the future.

Rags

The last three to four weeks have given the domestic and foreign rag situations an entirely different aspect. In place of being one of the quiet spots in the market, rags have come into the limelight along with waste paper and prices have stiffened correspondingly as the various grades have become more and more scarce. Writing paper manufacturers have been taking up quantities of new shirt cuttings, roofing rags are still setting the pace, and old thirds and blues continue to be in excellent demand. As with other paper mill stock, the better grades of rags are so scarce that a price advance is almost inevitable.

Twine

Although some immediate benefits have resulted to the twine market from the recent price stiffening in raw materials and the slightly stimulated demand which came as a result of this, dealers do not expect a thorough amelioration of conditions until the fall months have come around.

XUM

Market Quotations

Paper Company Securities

New York Exchange closing quotations July 11, 1922:

STOCKS	BID.	ASKED.
American Writing Paper Company, pref.	30	30¾
International Paper Company, com.	51¼	51⅜
International Paper Company, pref., stamped.	64¼	68½
Union Bag & Paper Corporation.	61	62

Paper

F. o. b. Mill.

Ledgers	10.50	@30.00
Bonds	8.50	@55.00
Writings—		
Extra Superfine	14	@ 25
Superfine	13	@ 20
Tub Sized	10	@ 16
Engine Sized	9.00	@15.00
News—f. o. b. Mill—		
Rolls, contract	3.50	@ 3.75
Rolls, transit	3.75	@ 4.00
Sheets	4.00	@
Side Runs	3.25	@ 3.50
Book, Cased—f. o. b. Mill		
S. & S. C	7.50	@ 9.00
M. F	6.00	@ 7.50
Coated and Enamel	8.75	@15.00
Lithograph	9.00	@11.00
Tissues—f. o. b. Mill		
White, No. 1	.75	@ .80
Colored	1.00	@ 2.00
Anti-Tarnish	.75	@ .80
Silver Tissue	1.50	@ 2.70
Manila	.75	@ .80
Kraft—f. o. b. Mill—		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	5.75	@ 6.25
Imported	6.00	@ 6.25
Screenings	2.50	@ 3.50
Manila—		
No. 1 Jute	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.50	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75
Fiber Papers—		
No. 1 Fiber	6.00	@ 6.25
No. 2 Fiber	5.00	@ 5.25
Common Bogus	1.75	@ 2.25
Card Middies	4.00	@ 5.00
Boards—per ton—		
News	35.00	@45.00
Straw	40.00	@45.00
Chip	32.50	@40.00
Binders' Board	60.00	@70.00
Sgl. Mla. Ll.Chip	52.50	@62.50
Wood Pulp	75.00	@90.00
Container	60.00	@70.00
Wax Paper—		
Self Sealing White 28 and 30 lb. basis	10.00	@11.00
Waxed Tissue	1.40	@ 1.60
Glassine—		
Bleached, basis 25 lbs.	12.75	@13.25
Bleached, basis 20 lbs.	13.75	@15.25

Mechanical Pulp

(Ex-Dock.)

No. 1 Imported	32.00	@38.00
(F. o. b. Pulp Mills.)		
No. 1 Domestic	28.00	@34.00

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.30	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
No. 2 Strong unbleached	2.25	@ 2.50
No. 1 Kraft	2.50	@ 3.00
Sulphate—		
Bleached	3.90	@ 4.00
(F. o. b. Pulp Mill.)		
Sulphite (Domestic)—		
Bleached	4.00	@ 4.50
Strong unbl'chd.	2.60	@ 2.80
Easy Bleaching Sulphite	2.60	@ 3.10
News Sulphite	2.50	@ 2.80
Mitscherlich	2.80	@ 3.10
Kraft (Domestic)	2.50	@ 3.00
Soda Bleached	3.50	@ 3.75

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	10.30	@11.00
New White, No. 2	6.50	@ 7.00
Silesias, No. 1	6.00	@ 6.50
New Unbleached	8.50	@ 9.00
Washables	3.50	@ 4.00
Fancy	5.00	@ 5.50
Cotton—according to Grades—		
Blue Overall	5.50	@ 6.00
New Blue	4.25	@ 4.75
New Black Soft	3.00	@ 3.25
New Light Seconds	2.75	@ 3.00
O. D. Khaki Cuttings	3.25	@ 3.60
Men's Corduroy	2.50	@ 2.75
New Canvas	6.50	@ 7.00
New Black Mixed	2.25	@ 2.75
Old White, No. 1—		
Repacked	5.60	@ 6.10
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	2.75	@ 3.00
Miscellaneous	2.10	@ 2.35
St. Soiled White	1.15	@ 1.25
Thirds and Blues—		
Repacked	1.60	@ 1.75
Miscellaneous	1.15	@ 1.25
Black stockings	2.25	@ 2.50
Roofing Rags—		
Cloth Strippings	1.10	@ 1.15
No. 1	1.10	@ 1.15
No. 2	1.00	@ 1.10
No. 3	.65	@ .75
No. 4	.65	@ .75
No. 5A	.90	nominal

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbl'chd Cottons	7.50	nominal
New White Cuttings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings	2.00	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	9.00	@11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cottons	1.50	nominal
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.10	@ 1.15
Shoppery	.90	@ .95
French Blues	2.00	nominal

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	.80	@ .85
Domestic	.80	@ .85
Wool, Tares, light	1.00	@ 1.10
Wool, Tares, heavy	1.10	@ 1.15
Bright Bagging	.90	@ 1.00
No. 1 Scrap	.80	@ .90
Sound Bagging	.75	@ .85
Manila Rope—		
Foreign	5.00	@ 5.25
Domestic	5.25	@ 5.50
New Bu. Cut	1.80	@ 1.90
Hessian Jute Threads—		
Foreign	2.00	@ 2.50
Domestic	2.00	@ 2.25
Mixed Strings	.75	@ .85

Twines

Cotton—(F. o. b. Mill)		
No. 1	.33	@ .35
No. 2	.31	@ .33
No. 3	.27	@ .29
India, No. 6 basis—		
Light	.18	@ .19
Dark	.18	@ .19
B. C., 18 Basis	.39	@ .41
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute—		
Light, 18 basis	.26	@ .27
Dark, 18 basis	.27	@ .29
Jute Wrapping, 3-6 Ply—		
No. 1	.23	@ .24
No. 2	.31	@ .32
Tube Rope—		
4-ply and larger.	.15	@ .17
Fine Tube Yarn—		
5-ply and larger.	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India—		
Basis	.16	@ .17
Paper Makers Twine Balls	.13	@ .15
Box Twine, 2-3 ply	.17	@ .18
Jute Rope	.13	@ .15
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.90	@ 4.15
Hard, White, No. 2	3.50	@ 3.70
Soft, White, No. 1	3.55	@ 3.65
Flat Stock—		
Stitchless	1.85	@ 1.95
Over Issue Mag.	1.85	@ 1.95
Solid Flat Book	1.75	@ 1.85
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	2.00	@ 2.50
Ledger Stock	1.75	@ 1.95
No. 1 White News	1.70	@ 1.80
New B. B. Chips	.60	@ .65
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cut No. 1	1.75	@ 1.90
Extra No. 1, Old	1.50	@ 1.60
Print	.90	@ 1.00
Container Board	.65	@ .75
Bogus Wrapper	.60	@ .70
Old Krafts, machine compressed Bales	1.80	@ 1.90
News—		
Strictly Overissue	.75	@ .85
Strictly Folded	.67½	@ .72½
No. 1 Mixed Paper	.55	@ .60
Common Paper	.35	@ .40

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill

All Rag Bond	35	@ 40
No. 1 Rag Bond	30	@ 35
No. 2 Rag Bond	18	@ 20
Water Marked Sulphite	10	@ 14
Sulphite Bond	9	@ 12
Sulphite Ledger	12	@ 13
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 22
No. 2 Fine Writing	12	@ 20
No. 3 Fine Writing	8	@ 12
No. 1 M. F. Book	6¼	@ 7
No. 1 S. & S. C. Book	6¾	@ 7½
Coated Book	8¾	@ 10¾
Coated Label	8½	@ 10½
News—Rolls, mill	3½	@ 4½
News—Sheets, mill	3¾	@ 4¾
No. 1 Manila	5	@ 5½
No. 1 Fiber	4½	@ 5
No. 2 Manila	4	@ 4½
Butchers' Manila	4	@ —
No. 1 Kraft	6¾	@ 7
No. 2 Kraft	5¾	@ 6
Wood Tag Boards	4	@ —
Screenings	2½	@ —
Boards, per ton—		
Plain Chip	35.00	@40.00
Solid News	40.00	@45.00
Manila Lined Chip	45.00	@52.50
Container Line—		
85 Test	55.00	@60.00
100 Test	60.00	@65.00
Binders' Board	75.00	@ —
Solid Wood Pulp	80.00	@90.00
Straw Board	35.00	@40.00
Filled Pulp Board	55.00	@60.00

Old Papers

Shavings—		
No. 1 Hard White	3.50	@ 3.75
No. 1 Soft Shav.	3.25	@ 3.35
No. 1 Mixed	1.10	@ 1.25
No. 2 Mixed	1.00	@ 1.10
White Envel. Cuttings	3.50	@ 3.75
Ledgers and Writings	1.75	@ 1.85
Solid Books	1.50	@ 1.60
No. 1 Books, light	.90	@ 1.00
Blanks	1.75	@ 2.00
Ex. No. 1 Manila	1.90	@ 2.00
Manila Envelope Cuttings	2.00	@ 2.10
No. 1 Manilas	1.00	@ 1.10
Folders News (over issue)	.80	@ .85
Old Newspaper	.75	@ .80
Mixed Papers	.70	@ .75
Straw Clippings	.70	@ .75
Binders Clippings	.70	@ .75
Kraft	1.75	@ 2.00
New Kraft Cuts	2.00	@ 2.10
Roofing Stock, f.o.b. Chicago, Net Cash—		
No. 1	25.00	@ —
No. 2	23.00	@ —
No. 3	21.00	@ —
No. 4	21.00	@ —

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.10	@ .60
Ledgers	.15	@ .40
Writings—		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F	.06	@ .09
Book, S. S. & C	.08	@ .15
Book, Coated	.08	@ .15
Coated Lithograph	.10	@ .15
Label	.08	@ .15
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul., No. 1	.08	@ .08½
Manila No. 2	.07½	@ .08
No. 2 Kraft	—	@ .08½
No. 1 Kraft	—	@ .09½
Common Bogus	.02½	@ .03
Straw Board	35.00	@45.00
News Board	32.50	@35.00
Chip Board	27.50	@32.00
Wood Pulp Board (Carload Lots)	90.00	@100.00
Binder Boards—		
Per ton	$65.00	@75.00
Carload lots	60.00	@65.00
Tarred Felts—		
Regular	48.00	@50.00
Slaters	54.00	@56.00
Best Tarred, 1-ply (per roll)	1.35	@ 1.50
Best Tarred, 2-ply (per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.63

Bagging

F. o. b. Phila.

Gunny No. 1—		
Foreign	.75	@ —
Domestic	.70	@ —
Manila Rope	4.00	@ 4.50
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Burlap	.75	@ .80
New Burlap Cuttings	1.75	@ 2.10

Old Papers

F. o. b. Phila.

Shavings—		
No. 1, Hard White	4.00	@ 4.25
No. 2, Hard White	3.50	@ 3.75
No. 1 Soft White	3.35	@ 3.50
No. 2 Soft White	2.00	@ 2.25
No. 1 Mixed	1.50	@ 1.75
No. 2 Mixed	1.00	@ 1.25

(Continued on page 66)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 8, 1922

SUMMARY

News Print.....113 rolls.
Printing Paper.....163 cs., 77 bls.
Blotting Paper.....3 cs.
Wall Paper.....53 cs., 2,074 rolls, 2 bls.
Hangings.....14 bls., 3 cs.
Photo Paper.....11 cs.
Packing Paper.....282 bls.
Wrapping Paper.....2,726 rolls, 98 bls.
Filter Paper.....4 cs.
Drawing Paper.....7 cs.
Litho Paper.....25 cs.
Copy Paper.....4 cs.
Surface Coated Paper.....26 cs.
Miscellaneous Paper.8,149 rolls, 1,903 bls., 321 cs.

CIGARETTE PAPER.

De Mauduit Paper Corp., Syria, Marseilles, 66 cs.
British American Tobacco Co., Baltic, Liverpool, 7 cs.
British American Tobacco Co., Laconia, Liverpool, 14 cs.
British American Tobacco Co., Carmania, Liverpool, 39 cs.
Tobacco Products Corp., Colombo, Genoa, 13 cs.
The Surbrug Co., La Bourdonnais, Havre, 28 cs.

PRINTING PAPER.

J. L. N. Smythe & Co., Noordam, Rotterdam, 117 cs.
B. F. Drakenfeld & Co., Carmania, Liverpool, 2 cs.
B. F. Drakenfeld & Co., Baltic, Liverpool, 33 cs.
F. L. Kraemar & Co., Quaker City, London, 2 cs.
Miller Wright Paper Co., Argus, Antwerp, 77 bls.
Oxford University Press, Laconia, Liverpool, 9 cs.

BLOTTING PAPER.

Coyle & Grant Co., Inc., Exeter City, Bristol, 3 cs.

WALL PAPER.

Bernard Judae & Co., Corson, Hamburg, 24 cs.
W. H. S. Lloyd, Zeeland, Antwerp, 2 cs.
F. G. Prager Co., by same, 2,074 rolls.
R. F. Downing & Co., Lisbon Maru, Yokohama, 27 cs.
A. Murphy & Co., Tarantia, Glasgow, 2 bls.

PAPER HANGINGS.

W. H. S. Lloyd & Co., Maine, London, 7 bls.
W. H. S. Lloyd & Co., Dakarian, London, 7 bls.
W. H. S. Lloyd & Co., by same, 3 cs.

PHOTO PAPER.

Gevaert Co. of America, Zeeland, Antwerp, 11 cs.

NEWS PRINT.

Hudson Trading Co., Corson, Hamburg, 113 rolls.

PACKING PAPER.

Republic Bag & Paper Co., by same, 282 bls.

WRAPPING PAPER.

W. Schall & Co., Orduna, Hamburg, 2,069 rolls.
Irving Nat'l Bank, Tyrifjord, Trondhjem, 488 rolls.
Irving Nat'l Bank, by same, 30 bls.
Chemical Nat'l Bank, by same, 68 bls.
Chemical Nat'l Bank, by same, 169 rolls.

FILTER PAPER.

H. Reeve Angel & Co., Dakarian, London, 4 cs.

DRAWING PAPER.

H. Reeve Angel & Co., Dakarian, London, 7 cs.

LITHO PAPER.

J. H. & G. Siebold, Lisbon Maru, Canton, 25 cs.

COPY PAPER.

R. F. Downing & Co., Lisbon Maru, Yokohama, 4 cs.

SURFACE COATED PAPER.

M. G. Lange, Geo. Washington, Bremen, 26 cs.

PAPER.

Wilkinson Bros. & Co., Drottningholm, Gothenburg, 2,020 rolls.
Chase Nat'l Bank, by same, 45 rolls.
M. O'Meara Co., by same, 4,873 rolls.
J. P. Heffernan Paper Co., by same, 211 bls.
E. C. Melby, by same, 79 bls.
C. K. MacAlpine, by same, 43 bls.
C. K. MacAlpine, by same, 1,211 rolls.
Hensel, Bruckman & Lorbacher, Reliance, Hamburg, 10 cs.
Birn & Wachenheim, Geo. Washington, Bremen, 100 bls.
Tamm & Co., Innoki, Rotterdam, 18 cs.
Kern Com'l Co., Noordam, Rotterdam, 36 cs.
J. P. Heffernan Paper Co., United States, Copenhagen, 388 bls.
P. H. Petry & Co., Bayern, Hamburg, 13 cs.
P. Puttmann, Zeeland, Antwerp, 2 cs.
Japan Paper Co., D. Alighieri, Genoa, 77 cs.
Whiting & Patterson, Paris, Havre, 4 cs.
Birn & Wachenheim, Seydlitz, Bremen, 100 bls.
Republic Bag & Paper Co., Corson, Hamburg, 757 bls.
Superior Card & Paper Co., by same, 228 bls.
Gevaert Co. of America, by same, 62 cs.
Columbia Overseas Corp., N. Amsterdam, Rotterdam, 12 cs.
Kern Com'l Co., by same, 87 cs.

RAGS AND BAGGING.

E. J. Keller Co., Inc., Lepanto, Antwerp, 32 bls. threads.
Dexcar Trading Co., Exeter City, Bristol, 100 bls. rags.
First Nat'l Bank of Boston, Feliciana, London, 27 bls. rags.
Irving Nat'l Bank, Corson, Hamburg, 54 bls. paper stock.
Castle, Gottheil & Overton, by same, 20 bls. rags.
Ladenburg, Thalman & Co., by same, 49 bls. paper stock.
Guaranty Trust Co., by same, 47 bls. rags.
Nat'l City Bank, by same, 44 bls. rags.
Bankers Trust Co., by same, 110 bls. rags.
E. J. Keller Co., Inc., N. Amsterdam, Rotterdam, 23 bls. rags.
Katzenstein & Keene, Inc., by same, 75 bls. rags.
American Express Co., by same, 166 bls. rags.
Castle, Gottheil & Overton, by same, 89 bls. rags.
G. W. Millar & Co., by same, 75 bls. bagging.
R. F. Downing & Co., Pres. Wilson, Alger, 42 bls. paper stock.
Equitable Trust Co., Zeeland, Antwerp, 48 bls. thread waste.
E. J. Keller Co., Inc., by same, 179 bls. flax waste.
E. Butterworth & Co., Baltic, Liverpool, 98 bls. paper stock.
American Wood Pulp Corp., Argus, Antwerp, 24 bls. rags.
E. J. Keller Co., Inc., by same, 16 bls. news cuttings.
Garfield Nat'l Bank, by same, 68 bls. rags.
Castle, Gottheil & Overton, by same, 234 bls. rags.
M. O'Meara Co., by same, 83 bls. paper stock.
M. O'Meara Co., by same, 184 bls. bagging.
Irving Nat'l Bank, by same, 230 bls. rags.
Atlantic Nat'l Bank, by same, 177 bls. rags.
Brown Bros. & Co., by same, 515 bls. rags.
First Nat'l Bank of Boston, Roma, Marseilles, 57 bls. rags.
Yglesias & Co., Orizaba, Havana, 40 bls. hide cuttings.
Goldman, Sachs & Co., Bayern, Hamburg, 259 bls. rags.
Brown Bros. & Co., Tarantia, Glasgow, 14 bls. rags.
First Nat'l Bank of Boston, by same, 154 bls. rags.
American Express Co., Geo. Washington, Bremen, 28 bls. thread waste.
Goldman, Sachs & Co., La Bourdonnais, Havre, 197 bls. rags.
Nat'l City Bank, by same, 120 bls. rags.
American Wood Pulp Corp., Innoki, Rotterdam, 40 bls. rags.
Castle, Gottheil & Overton, Noordam, Rotterdam, 1 bl. paper stock.
Waste Materials Trading Corp., by same, 442 bls. paper stock.
E. J. Keller Co., Inc., by same, 25 bls. paper stock.
Katzenstein & Keene, Inc., Westerdyk, Rotterdam, 47 bls. rags.
E. J. Keller Co., Inc., Morristown, Hamburg, 40 bls. rags.
Castle, Gottheil & Overton, Saxonia, Hamburg, 89 bls. rags.
Castle, Gottheil & Overton, Mount Clay, Hamburg, 151 bls. rags.
Castle, Gottheil & Overton, Port Adelaide, London, 47 bls. rags.

OLD ROPE.

Katzenstein & Keene, Inc., Cameronia, Glasgow, 46 coils.
E. J. Keller Co., Inc., Corson, Hamburg, 56 coils.
E. J. Keller Co., Inc., N. Amsterdam, Rotterdam, 68 coils.
Brown Bros. & Co., Exeter City, Cardiff, 95 coils.
M. O'Meara Co., Argus, Antwerp, 73 coils.
Hallie & Co., Noordam, Rotterdam, 147 coils.
E. J. Keller Co., Inc., Westerdyk, Rotterdam, 104 bales.

WOOD PULP.

Seggerman Bros., Drottningholm, Gothenburg. 250 bales.
Scandinavian American Trading Co., by same, 160 bales.
Tidewater Papermills Co., Barneholm, Murray Bay, 1,349 tons.
Tidewater Papermills Co., Barneholm, Murray pool, N. S., 8,146 bales, 814 tons.
Central Union Trust Co., St. Paul, Hamburg, 514 bls.
M. Gottesman & Co., Inc., N. Amsterdam, Rotterdam, 580 bales.

WOOD FLOUR.

B. L. Soberski, Tyrifjord, Kristiania, 897 bags.

CASEIN.

J. A. & W. Bird & Co., Halesius, Buenos Aires, 910 bags.
Kalbfleisch Corp., by same, 500 bags.
Kalbfleisch Corp., Vasari, Buenos Aires, 834 bags.
Kalbfleisch Corp., West Camak, Buenos Aires, 583 bags, 34,980 kilos.
A. Klipstein & Co., Dakarian, London, 400 bags.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 8, 1922

A. Jacobs & Co., Feliciana, London, 18 pgs. waste paper.
Katzenstein & Keene, Inc., Corson, Hamburg, 333 bls. rags.
Brown Bros. & Co., Argus, Antwerp, 128 bls. rags.
Salomon Bros. & Co., by same, 404 bls. rags.
Castle, Gottheil & Overton, by same, 560 bls. rags.
E. J. Keller Co., Inc., Innoki, Rotterdam, 576 bls. rags.
Castle, Gottheil & Overton, Opelika, Bristol, 133 bls. rags.
Castle, Gottheil & Overton, Breiz Izel, Rouen, 429 bls. rags.
Castle, Gottheil & Overton, S. Western Miller, London, 277 bls rags.
Katzenstein & Keene, Inc., Blydendyk, Rotterdam, 252 bls. rags.
Castle, Gottheil & Overton, Opelika, Bristol, 73 coils old rope.
American Exchange Nat'l Bank, Corson, Hamburg, 53 coils old rope.
H. B. Franks, Feliciana, London, 121 coils old rope.
R. Hough & Co., by same, 137 pkgs. old rope.

BOSTON IMPORTS

WEEK ENDING JULY 8, 1922

M. Gottesman & Co., Inc., Chebaulip, Skutskar, 508 bls. wood pulp.
J. A. & W. Bird & Co., Dakarian, London, 244 bgs. casein.
Baring Bros. & Co., by same, 296 bls. waste paper.
Brown, Bros. & Co., by same, 182 bls. waste paper.
J. B. Moors & Co., by same, 33 bls. waste paper.
G. W. Wheelwright Paper Co., by same, 267 bls. waste paper.
First Nat'l Bank of Boston, by same, 61 bls. rags.
Brown Bros. & Co., by same, 586 coils old rope.
Brown Bros. & Co., by same, 17 bls. old rope.
R. Harris & Co., by same, 7 cs. photo paper.
Katzenstein & Keene, Inc., Caledonian, Liverpool, 40 bls. rags.
E. J. Keller Co., Inc., Blydendyk, Rotterdam, 94 bls. rags.

CLEVELAND IMPORTS

WEEK ENDING JULY 8, 1922

S. Silberman & Co., N. Amsterdam, Rotterdam, 201 bls. bagging.
S. Silberman & Co., N. Amsterdam, Rotterdam, 404 bls. shopperies.
S. Silberman & Co., Noordam, Rotterdam, 399 bls. paper stock.

XUM

TAYLOR, BATES & CO.

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Members New York Cotton Exchange

100 Broadway, New York

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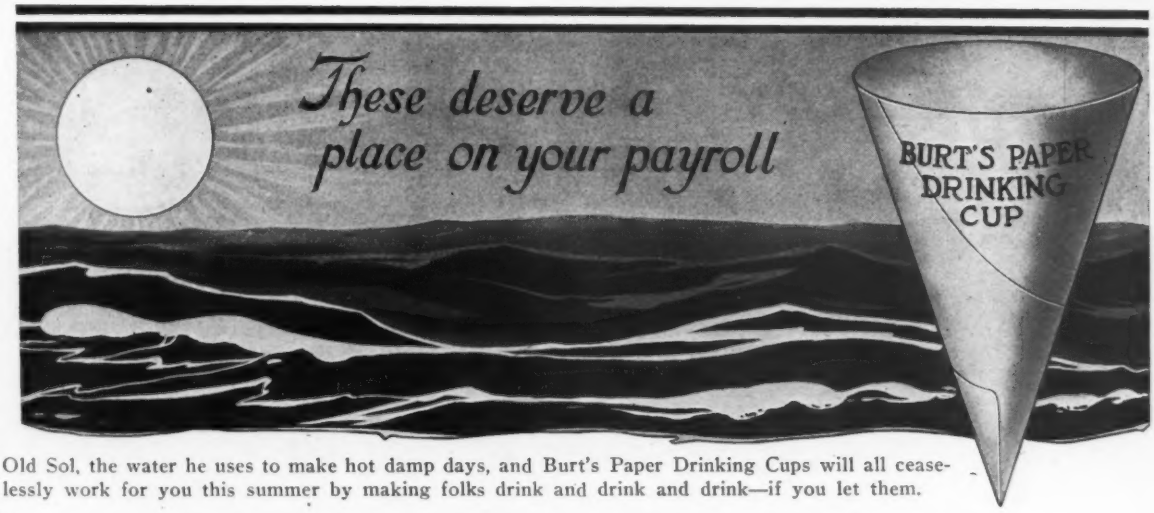

Old Sol, the water he uses to make hot damp days, and Burt's Paper Drinking Cups will all ceaselessly work for you this summer by making folks drink and drink and drink—if you let them.

Burt's Paper Drinking Cups For Particular People

Snow white of fine paper.
No wax to make drink taste.
No bottom to fall out.
Nor to set aside on.
No animal glue used.

One-at-a-time dustproof dispenser.
Of ample capacity.
No opening up and soiling.
Drinking edge untouched by hands before use.

Trebly reinforced to make holders unnecessary.
Lowest in cost.
Holds hot drinks.

You can sell such cups to particular people who stay sold and repeatedly come back for more—at a good profit to you.

F. N. BURT COMPANY, Ltd., Paper Cup Division, Buffalo, N. Y.

XUM

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, July 11, 1922,

ALUM.—Quoted at approximately 3.50 cents a pound for the lump, 3.65 for ground, and 3.90 cents for the powdered, alum has remained in fair demand during the past week. Paper manufacturers are consuming the commodity in regular quantities despite the season of the year.

BLEACHING POWDER.—Aside from a perceptible steadiness at the quoted price of 1.60 cents a pound, the bleach market has not altered recently.

BLANC FIXE.—The quoted prices of $37.50 to $45 per ton still hold for blanc fixe pulp, and the dry blanc fixe is generally conceded to be firm at 3.50 to 3.75 cents a pound. Paper manufacturers are using increasingly larger quantities each week and available supplies are rapidly diminishing.

CASEIN.—While there are still very few importations of Argentine casein coming into this country, the domestic production is progressing at a fair rate of speed. Casein dealers of this city unanimously quote 14.00 cents a pound and report that the demand for the commodity is greater than ever.

CAUSTIC SODA.—Due to the fact that the demand abroad for caustic has slowed down noticeably, spot quantities of soda can be secured at a relatively low price level. Prices are still quoted at 3.40 to 3.50 cents a pound and these figures are occasionally shaded for quantity purchases.

CHINA CLAY.—The recent price alterations on China Clay have brought the price of the imported clay to $14 to $22 per ton, with domestic washed following at $7 to $10 and unwashed at $5.50 to $8.00. Leading dealers in English clays report that while they have enormous wet stocks on the ground in England, the demand is now so great that it is now drawing upon the dry stocks in goodly volume. The disposition of American mills to make better paper in recent months has led to an increased demand for the imported product with the result that dealers are busier than ever.

LIQUID CHLORINE.—Chlorine is easy and price quotations fluctuate from 4.50 cents a pound in tank-car lots to 7.00 cents in cylinders of 100 pounds.

ROSIN.—Grades E, F and G of rosin continue to be listed at $5.20 per barrel of 280 pounds, Savannah, Ga., of $6.20 f.o.b., New York, with prices fairly firm.

SALTCAKE.—This product is still being taken up rapidly by the pulp and glass industries and the depleted stocks point to a stiffening in the quoted prices of $18 a ton for chrome cake and $20 to $22 for acid cake.

SATIN WHITE.—There has been practically no change in this market in the past week, 1.50 to 2.00 cents a pound, still being the price at which the commodity is listed.

SODA ASH.—Holding on fairly steady at the contract basis of approximately $1.51 per 100 pounds, works, soda ash continues to be in good demand.

SULPHUR.—No variations have been reported for some time in the sulphur market, the price of $18 to $20 per ton holding very firm.

STARCH.—This market continues to be active and prices, while fluctuating slightly from the quoted 2.47 and 2.75 cents a pound for paper maker's starch and 2.37 and 2.65 for pearl starch, bag and barrel lots respectively, are considered to be fairly firm.

SULPHATE OF ALUMINA.—Manufacturers of aluminum sulphate are running pretty near capacity, the demand continuing strong from both paper manufacturers and water filtration plants. Prices are quoted at 1.40 to 1.50 cents a pound, with iron free at 2.15 to 2.35.

Market Quotations

(*Continued from page 63*)

Solid Ledger Stock.	2.25	@	2.50
Writing Paper.....	1.80	@	2.00
No. 1 Books, heavy.	1.60	@	1.75
No. 2 Books, light.	1.40	@	1.50
No. 1 New Manila.	2.75	@	3.00
No. 1 Old Manila..	1.50	@	1.75
Container Manila..	1.00	@	1.10
Old Kraft.....	2.00	@	2.25
Overissue News....	.75	@	.80
Old Newspaper....	.50	@	.60
No. 1 Mixed Paper.	.45	@	.50
Common Paper....	.40	@	.50
Straw Board, Chip.	.40	@	.45
Binders' Bd. Chip.	.40	@	.45

Domestic Rags—New.
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.10	@	.10¼
New White, No. 2	.05½	@	.06½
Silesias, No. 1...	.05½	@	.06
New unbleached..	.09	@	.09½
Washables	.03½	@	.03¾
Fancy	.04¼	@	.04¼
Cottons—according to grades—			
Blue Overall.....	.04½	@	.05¼
New Blue.....	.02	@	.02¼
New Black Soft.	.03	@	.03¼
New Light Sec-			
	.02	@	.02¼
Khaki Cuttings...	.02¼	@	.03¼
Corduroy	.02	@	.02½
New Canvas.....	.07	@	.07½
New Black Mixed	2.75	@	3.00
Old			
White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous ...	.04½	@	.04¾
White, No. 2—			
Repacked	.03	@	.03½
Miscellaneous ...	.02¾	@	.02⅞
Thirds and Blues—			
Repacked	1.65	@	1.80
Miscellaneous ...	1.40	@	1.55
Black Stockings....	1.75	@	2.25
Roofing Stock—			
No. 1.....	1.00	@	1.10
No. 2.....	.90	@	1.00
No. 3.....	.80	@	.90
No. 4.....	.80	@	.90
No. 5A.....	nominal		
B.....	nominal		
C.....	nominal		

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.06¾	@	.60
Ledgers	.07½	@	.35
Writings	.07½	@	.22½
Superfine	.15	@	.22½
Fine	.15	@	.18
Books, S. & S. C...	.07	@	.10
Books, M. F.....	.05¾	@	.07½
Books, coated	.08	@	.10
Label	.08½	@	.09½
News sheets	3.75	@	—
News, rolls	3.50	@	—
Manilas—			
No. 1 Manila ...	$6.75	@	
No. 1 Fibre	.07½	@	—
No. 1 Jute.....	8.50	@	8.75
Kraft Wrapping ...	.06¼	@	.07
Common Bogus ...	3.00	@	

Boards

(Per Ton Destination)

Chip	$35.00	@	37.50
News, Vat Lined...	36.50	@	38.50
Wood, Vat Lined..	47.25	@	
Filled News Board..	37.50	@	
Solid News Board..	42.00	@	45.00
S. Manila Chip....	52.50	@	
Pat. Coated.....	70.00	@	75.00

Old Papers

Shavings—			
No. 1 Hard White	3.70	@	3.90
No. 1 Soft White	3.30	@	3.45
No. 1 Mixed....	1.50	@	1.75
Ledgers & Writings	.03½	@	—
Solid Books	1.85	@	2.10
Blanks	1.30	@	1.45
No. 2 Books Light.	.60	@	.70
Folded News, over-			
issues	$11.25	@	12.50
Mixed paper.....	47.50	@	50.00
Gunny Bagging....	.70	@	.75
Manila Rope.....	4.25	@	4.50
Common Paper....	.35	@	.40
Old News.....	.80	@	
Old Kraft.....	1.75	@	1.80

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted.....	.12	@	.13½
Dark tinted.....	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing	.10½	@	.13½
News, f. o. b. Mills—			
Rolls (carloads).	3.50	@	
Sheets (carloads).	—	@	4.25
Sheets (2 tons or			
over)	—	@	4.50
Book—			
No. 1 M. F. (car-			
loads)	9.50	@	—
No. 2 M. F. (car-			
loads)	8.50	@	—
No. 3 M. F. (car-			
loads)	8.00	@	—
No. 1 S. C. (car-			
loads)	10.00	@	—
No. 2 S. C. (car-			
loads)	9.00	@	—
No. 1 Coated and			
litho.	14.00	@	—
No. 2 Coated and			
litho.	13.00	@	—
No. 3 Coated and			
litho.	12.25	@	—
Coated and litho.,			
colored	14.25	@	—
Wrapping—			
Grey	4.50	@	—
White Wrap	5.00	@	—
"B" Manila	5.50	@	—
No. 1 Manila ..	6.75	@	—
Fibre	6.75	@	—
Kraft. M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood....	$27.50	@	35.00
Sulphite easy bleach-			
ing	60.00	@	65.00
Sulphite news grade.	50.00	@	60.00
Sulphite, bleached..	90.00	@	95.00
Sulphate	70.00	@	

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.75	@	—
Soft White Book			
Shavings	3.40	@	3.45
White Blk News	1.70	@	—
Book and Ledger—			
Flat Magazine and			
Book Stock (old)	1.70	@	—
Light and Crum-			
pled Book Stock	1.55	@	—
Ledgers and Writ-			
ings	1.95	@	—
Solid Ledgers....	1.95	@	—
Manilas—			
New Manila Cut.	1.70	@	—
Printed Manilas..	.90	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News....	.80	@	—
No. 1 Mixed Pa-			
pers	.60	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto.			Per lb.
No. 1 White shirt			
cuttings	.10¼	@	.11
No. 2 White shirt			
cuttings	.05½	@	.05¾
Fancy shirt cut-			
tings	.05	@	.05½
No. 1 Old whites	.04	@	—
Thirds and blues	.02	@	.02½
			Per cwt.
Black stockings..	2.00	@	2.25
Roofing stock:			
No. 1.....	1.35	@	—
No. 2.....	1.20	@	—
Roofing stock:			
Manila rope	.05¼	@	.05¾
No. 2.....	.01½	@	—
Gunny bagging....	1.00	@	1.25

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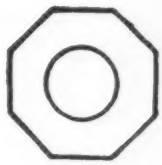

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EASTERN AGENTS of Sulphite Pulp. Made by
Port Huron Sulphite & Paper Co., Port Huron, Mich.

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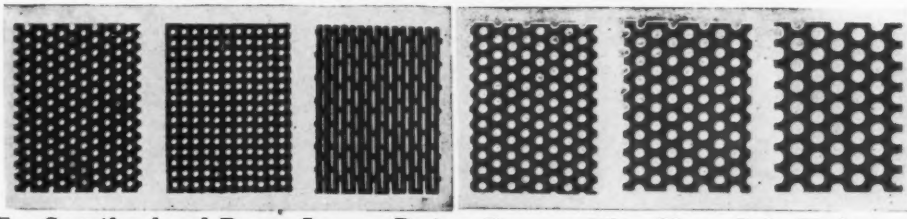

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WANT AND FOR SALE ADVERTISEMENTS

HELP WANTED

WANTED—One cylinder machine tender experienced on High Grade Box and Tag Board and specialties. Eight-hour tours. Steady work. Address, Box 5228, care Paper Trade Journal. Jy-13

WANTED—Paster man to take charge of three pasters. Excellent opportunity for right man. Address, Box 5229, care Paper Trade Journal. Jy-20

WANTED—Young man to act as Business Manager for Toilet and Tissue Mill. Send copies of references and state experience, especially if have had sales experience. Address, Box 5191, care Paper Trade Journal. Jy-13

SUPERINTENDENT WANTED by modern progressive mill located in Middle Wesct. Must be fully up to date on cylinder tissue, have some knowledge of converting, be good at handling help. Man not over 35 years old preferred. Applicant must state age, past and present connections, salary now receiving if employed and other information considered of interest to a prospective employer. Address, Box 5192, care Paper Trade Journal. tf

WANTED—Felt Mill Superintendent for California. Thoroughly experienced man on machine making Roofing Felt and Sheathing Paper. Capable of assisting in purchase and erection of new Mill and with ability to economically operate and secure maximum production after erection. Must be successful manager. Give complete experience in first letter. Address, Box 5194, care Paper Trade Journal. Jy-13

WANTED: First class machine tender and back-tender, experienced on felt and asbestos papers. Sober, industrious men. References, age, married or single in first letter. Address, Box 5169, care Paper Trade Jour- Jy-13

WANTED—A night foreman in two machine Kraft mill. Please state experience and wages desired. Address, Box 5242, care Paper Trade Journal. J-27

SALESMAN—To represent large manufacturer in Metropolitan District on commission basis, reasonable drawing account. Must have knowledge of paper bag specialties and envelopes. Unequalled opportunity for competent man. Address, Box 5244, care Paper Trade Journal. J-13

WANTED to correspond with able paper distributors in Middle West to handle output of small plant making Filter Paper, Rope and Manilas. Special inducement offered. Address, Box 5245, care Paper Trade Journal. J-27

WANTED—Man capable of supervising Fibre Container factory equipped with most modern machinery. Experienced man preferred. Address, Box 5246, care Paper Trade Journal. J-13

ASSISTANT SUPERINTENDENT wanted. Must have a good knowledge of colors. Apply, giving full experience and salary expected, to Box 5250, care Paper Trade Journal. J-20

WANTED:

two first class backtenders for box board mill. Give age, references, experience and where last employed in first letter. National Paper Products Company, Stockton, California. Jy-13

HELP WANTED

WANTED—Adjuster on Satchel Bottom Paper Sack Machines, Rotary Tuber and Bottomers. Good chance. Steady job, New York City factory. Reply giving experience, salary expected, etc., to Box 5243, care Paper Trade Journal. J-20

SITUATIONS WANTED

MARRIED MAN with 15 years' experience in ground wood mills is open for position of superintendent or foreman. Can produce results. Best of references. Address, Box 5232, care Paper Trade Journal. Jy-20

EXPERIENCED SALESMAN—Fine papers, desires position to sell Chicago and Central West jobbers. Address, Box 5253, care Paper Trade Journal. A-3

YOUNG MAN—One year in college, four years in pulp and paper mills, seeks connection leading to selling position. Familiar with pulp and paper of all kinds; also manufacturing processes. References. Address, Box 5254, care Paper Trade Journal. J-20

WOOD PULP AND PAPER MILL SUPPLIES MAN, with about 10 years' experience in selling and purchasing these materials, desires connection with progressive firm. A1 references. Address, Box 5255, care Paper Trade Journal. J-13

FIRST CLASS MILLWRIGHT, who understands how to keep up the mechanical part of a paper or pulp mill to the highest efficiency. A hustler. References. Address, Box 5256, care Paper Trade Journal. J-13

EXPERIENCED ENGINEER, technical graduate, five years' experience in factory building construction and design, hydro-electric development and paper mill design, desires connection with paper mill as engineer and to handle executive work. Address, Box 5257, care Paper Trade Journal. J-20

MILL CONNECTION WANTED for the Greater New York territory and vicinity, by selling organization in touch with the large buyers and users of paper. M. F. Super, Coated, Litho Coated, Bond Kraft or News Print, preferred. Have ample capital to finance large volume of business. Eastern Mill preferred. Address, Box 5258, care Paper Trade Journal. A-10

$6,000 OFFICE MANAGER, Sales, Credits, Purchases, Costs, etc., seeks new connection. Highest references given. Address, Box 5259, care Paper Trade Journal. A-3

SALESMAN—Specialist on Coated Lithographic Papers and Boards; also Offset and Printing Papers, desires to connect with mill or dealers having mill connections. Can produce good business. Address, Box 5260, care Paper Trade Journal. J-20

MAN EXPERIENCED IN PAPER MILL ACCOUNTING, costs, office management and administrative problems, seeks position with progressive firm. Address, E. J. B., P. O. Box 760, Cincinnati, Ohio. A-3

General Superintendent
OR
Manager

now employed will be open for position after July 15th. Experience covering a variety of products, including High Grade Book, Envelope, Bonds, Ledger, Writings, and Specialties. Would like to communicate with concern planning such a change in their organization. Address, Box 5195, care Paper Trade Journal. Jy-13.

SITUATIONS WANTED

POSITION WANTED as Machine Tender. Experienced on Harper with Feller attachment. Also Edwards machine on Tissue or medium weights. Address, Box 5247, care Paper Trade Journal. J-13

WANTED—Superintendent of twenty years' experience as practical papermaker is open for position in news line. Address, Box 5248, care Paper Trade Journal. J-13

SALESMAN, experienced, desires to represent mill manufacturing medium grade of paper specialties for New England Territory. Also mill manufacturing Kraft Wrapping Paper. Address, Box 5249, care Paper Trade Journal. J-20

GOOD SUPER CALENDER MAN would like steady position. Twenty years' experience. Capable of Foreman's job. Some experience on sheet cutters. Address, Box 5251, care Paper Trade Journal. J-13

PAPER LINE—Man available. Fifteen years' experience with large paper converter, desires position in sales end paper mill or jobbing line; would consider part interest in established jobbing house. Best references. Address, Box 5252, care Paper Trade Journal. A-3

PRACTICAL PAPER MAKER desires a position with a board or specialty mill. Having had experience in both cylinder and fourdrinier mills in all departments. Have been doing engineering work in different mills for past four years. Experienced in construction and mechanical details. Address, Box 5233, care Paper Trade Journal. Jy-20

SPLENDID OPPORTUNITY for established firm to secure services of export paper man with splendid connections in Cuba. Personal contact with buyers eliminates uncertainty of extending credits. Address, Box 5236, care Paper Trade Journal. Jy-13

COATING MILL SUPERINTENDENT now employed, desires to make a change. Twenty-four years of sound practical experience on all grades of coated papers. For further information, address, Box 5219, care Paper Trade Journal. Jy-20

BOSS BEATERMAN wants position. Accustomed to nearly all grades. Up-to-date color man. Good references. Can get good results if given a chance. Address, Box 5220, care Paper Trade Journal. Jy-13

PRACTICAL MASTER MECHANIC desires position. Capable of installing and keeping machinery in first-class condition. Ability to handle help and get results. Best references. Address, Box 5221, care Paper Trade Journal. Jy-13

A MAN thoroughly competent to run Calender and Press Roll Grinding Machine and able to determine Crowns desired. Wishes permanent or temporary work. Address, Box 5197, care Paper Trade Journal. Ag-3

SUPERINTENDENT desires position as Corrugated and Fibre Superintendent. Nine years' experience, thoroughly familiar with all makes, Combiners and swift Combination Machines. Address, Box 5200, care Paper Trade Journal. Jy-13

AGGRESSIVE PRODUCER wishes to connect with firm desiring to increase their sales of paper. Prefer connection with small organization with sufficient capital to carry on satisfactory operations selling book and coarse paper to local trade, or for export. Address, Box 5237, care Paper Trade Journal. Jy-13

SUPERINTENDENT wishes position in news print mill. 10 years' experience in up-to-date fast running mills. Knows ground wood and sulphite and can take care of repairs and keep mill in good condition for same. Can furnish best of references from manager of up-to-date and well equipped mill. Address, Box 5238, care Paper Trade Journal. Jy-26

SITUATIONS WANTED

CAPABLE EXECUTIVE wishes position with paper firm where conscientious efforts along sales lines will win recognition. Address, Box 5235, care Paper Trade Journal. Jy-13

SUPERINTENDENT wishes position. 28 years' experience in mills making news, manilas, fibres, machine finish book, and writing, coating stock, tissue, and some experience on bond papers. Would take night foreman or boss machine tending if chances are good for advancement. Strictly up-to-date on repairs and not afraid to hustle. Best references for any grade mentioned above. Address, Box 5239, care Paper Trade Journal. Jy-20

BEATERMAN wishes a position. Well up on all grades of stock, box boards, container, book manilas, tissues and most all grades. Married. Can furnish best of references. Address, Box 5240, care Paper Trade Journal. Jy-20

BOSS FINISHER desires to make a change. Twelve years of Finishing Department experience on Cutters, Trimmers, Kidder Press Rewinder all styles of finishing domestic and export on Wrappings, Tissue and Glassine. Capable of taking full charge of finishing and shopping department, also inventory. Can furnish good references as to ability, character and personality. Address, Box 5198, care Paper Trade Journal. Jy-13

MASTER MECHANIC with 27 years' Pulp and Paper Mill experience is open for engagement, familiar with Boilers, Engines, Electrical and General Maintenance. First class references. Address, Box 5201, care Paper Trade Journal. Jy-20

A PAPERMAKER of ability knows paper from A to Z, number of years jobbing experience, as Manager and Buyer, Paper, Twine and Cordage, desires to connect with a reliable House in a similar capacity, high grade references. Address, Box 5185, care Paper Trade Journal. Jy-20

YOUNG MAN, 25, married, wishes to connect with Paper Mill. Has had experience in Paper Mill cost accounting, payrolls and mill systems; also selling experience. At present calling on printers and publishers. Feels qualified to fill almost any inside position or be useful in Sales Department. Address, Box 5145, care Paper Trade Journal. Jy-13

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. Jy-13

SUPERINTENDENT of many years' experience in producing Box Boards is seeking a connection where quantity and quality production at a minimum cost will be recognized. Have best of references, for efficiency and maintaining harmony among employees. Address, Box 5117, care Paper Trade Journal. Jy-13

BEATER ENGINEER wishes to make a change from his present position. Experienced on high grade Box Boards, Tests, etc. Also fine papers. Married, sober. Good references. Address, Box 5167, care Paper Trade Journal. Jy-20

Property For Sale

Consists of small farm and outbuildings, fine residence, small paper mill, steam and water power, running good sizes and weights. We are offered twice the tonnage mill is making. Plot of land on railroad siding. Freehold, water rights and clear titles. Price reasonable. Owner retiring. Opportunity for papermaker with grown up family. Address, Box 5241, care Paper Trade Journal. J-20

FOR SALE

FOR SALE—1 small Jordan Engine. 6 Farnum Drives. Complete Triple-Deck frames for 44 dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

FORECLOSURE SALE—Property Ulster Tissue Mills, Inc., Napanoch, Ulster Co., N. Y., July 22, 1922, at 2 P. M.—About 8 acres land, Paper Mill, Machine Shop, Power Plant, New Stone Office Building, Store Houses. Two 72-inch single cylinder tissue machines, with complete accessory equipment, Jordans, beaters, chests, and all finishing machinery. Adequate water power, two dams, total head about 90 feet, with steam and electric auxiliary; complete electric auxiliary, with transmission line new; all in good running order. For particulars, inquire H. Westlake Coons, Esq., Ellenville, N. Y. J-20

MISCELLANEOUS

SWIFT, GEORGE W., JR., Designer and Manufacturer of Special Machinery for Manufacturing and Printing Paper Goods. Bordentown, N. J. 8-24-22

PROPOSALS FOR FURNISHING

PAPER FOR THE PUBLIC PRINTING AND BINDING.

Sealed proposals will be received until 10 o'clock a. m., July 31, 1922, in the room of the Joint Committee on Printing, in the Capitol, Washington, D. C., for furnishing the paper for the public printing and binding for the term of six months beginning the 1st day of September, 1922. The proposals will be opened before and the awards of contracts made by the Joint Committee on Printing to the lowest and best bidder for the interest of the Government whose bids are in conformity with the requirements of the proposals. The Committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedule, and specifications, accompanied by standard samples, may be obtained by addressing George H. Carter, Public Printer, Washington, D. C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates.

The approximate estimated quantities set forth in detail in the Schedule comprise:

1,040,000 pounds newsprint paper; 4,848,000 pounds machine-finish printing paper; 500,000 pounds plant-fiber machine-finish printing paper; 15,000 pounds antique printing paper; 15,000 pounds opaque printing paper, high machine finish; 450,000 pounds rag machine-finish printing paper; 1,105,000 pounds sized and supercalendered printing paper; 100,000 pounds halftone printing paper; 165,000 pounds coated book paper; 1,500 pounds U S M O, white and blue writing paper, machine-dried; 750 pounds white French folio paper; 1,065,000 pounds writing paper, high machine finish; 2,680,000 pounds writing paper, air or loft dried; 2,000 pounds fine white writing paper, loft-dried; 1,500 pounds safety writing paper; 250,000 pounds U S M O blue safety writing paper; 75,000 pounds map paper; 401,000 pounds bond paper; 550,000 pounds ledger paper; 1,750 pounds tissue paper; 137,000 pounds cover paper; 5,000 sheets cloth-lined cover paper; 635,000 pounds manila paper; 10,000 pounds manila tympan paper; 110,000 pounds manila board; 20,000 pounds cardboard; 475,000 pounds bristol board; 3,500,000 pounds U. S. Postal Card cream bristol board; 4,000 pounds index bristol board; 1,000 pounds white paraffin paper; 2,250 pounds noncurling gummed paper; 1,000 pounds blotting paper; 2,000 pounds stereotype molding paper; 6,000 pounds offset paper, for web presses; 1,000 pounds plate-wiping paper, for embossing presses; 2,300 pounds lining and stripping paper; 1,000 pounds red pressboard; 500 pounds news board; 220,000 pounds chip board; 45,000 pounds strawboard; 40,000 pounds box board, lined; 380,000 pounds binder's board.

In cases where more than 1,000 reams are called for, proposals will be received for 1,000 reams or more.

By direction of the Joint Committee on Printing.

GEORGE H. CARTER,
Public Printer.

Washington, D. C., June 20, 1922.

J-13-20

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DRYERS—Four 48"x111", thirteen 36"x95", four 48"x68", one 84"x67", eleven 42"x66".
CHILLED CALENDERS—One 72" five roll; one 66" five roll; one 54" five roll; two 58" six roll.
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JORDANS—One Wagg Majestic, two No. 2 Dillon Improved, one Large Horne, three Monarch, one Jones Standard, two Pope Brushing Engines.
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STUFF PUMPS—Deane triplex 9"x8", Gould triplex 8"x10", Sandusky triplex 4"x6", 2—6" post.
REVOLVING SHEET CUTTERS—Five 61" Hamblet, four 61" Finlay, one 50" Hamblet diagonal, one 42" Finlay.
REAM CUTTER—One 48" Acme.
SUPER CALENDERS—One 45", one 42", one 36" Holyoke.
WET MACHINES—Four 72" Bagley & Sewall Hydraulic, 1—52".
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1—200 H.P. General Electric Motor. (Used two months.)
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1—15¼x27 Buckeye Engine.

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Only 100 miles west of Chicago. Two Paper Machines 100,000 lbs. per day production of various grades of boards. Railroad sidings at the mill. 650 H. P. water power. Up to date and complete.

The reason this Mill is offered for sale is because only part of present stockholders are consumers of board. They own majority of stock and are willing that either mill be sold outright or to retain their holdings and arrange for sale of 50% interest, preferably to some other consumer of board.

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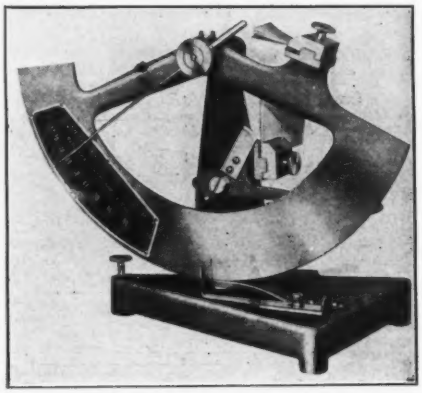

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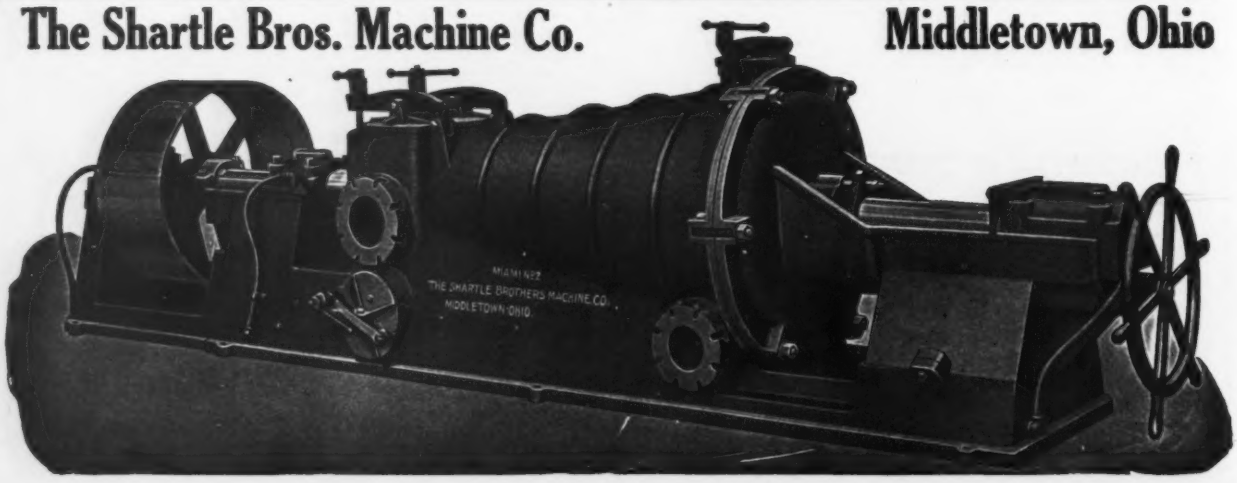

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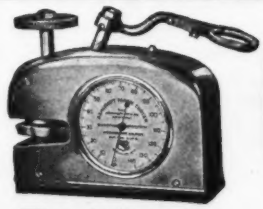
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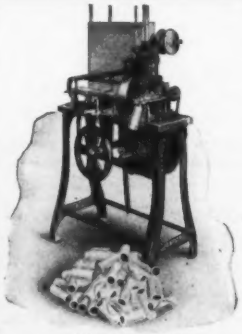
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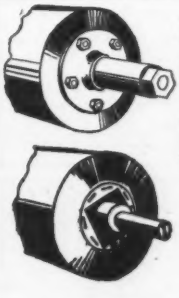
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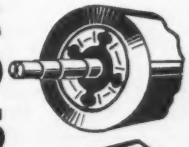

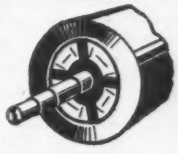
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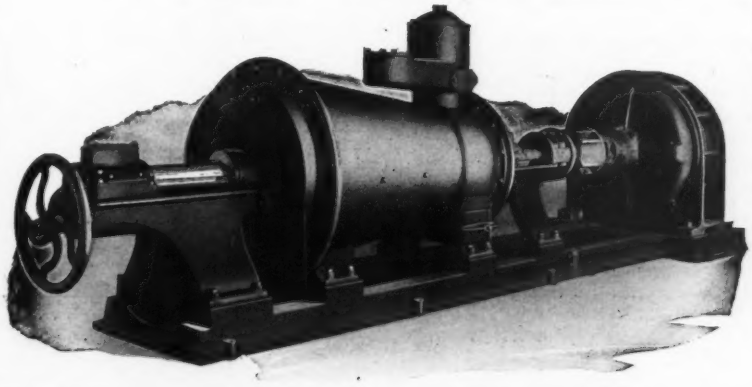

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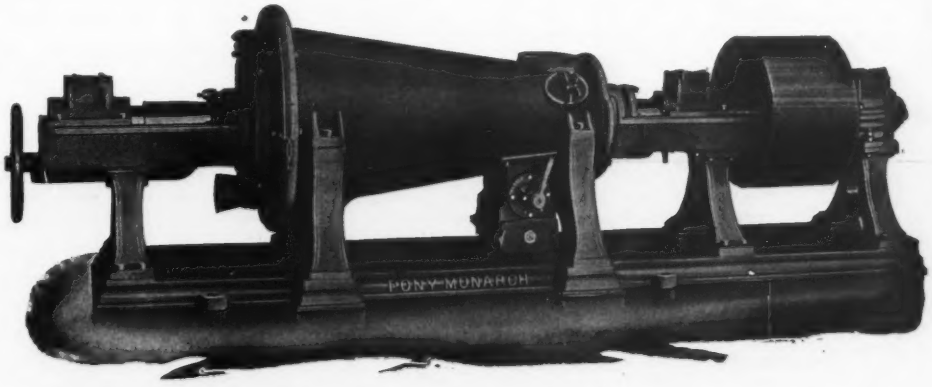

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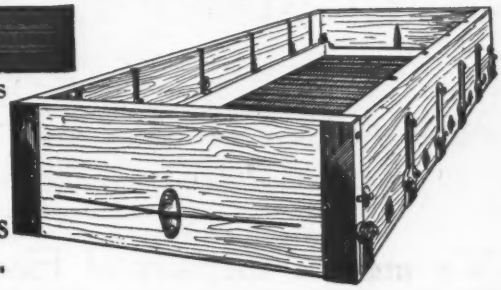

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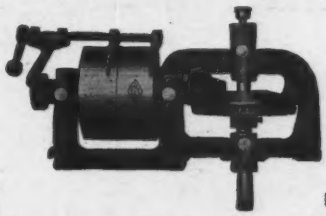

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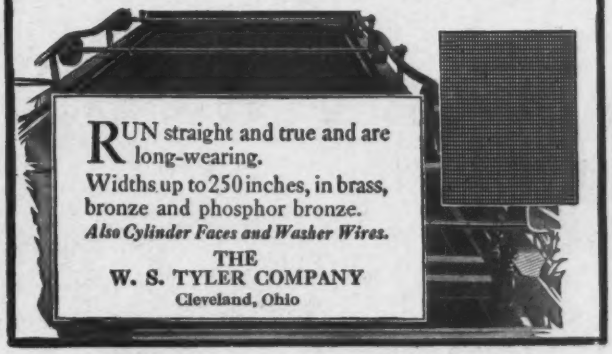

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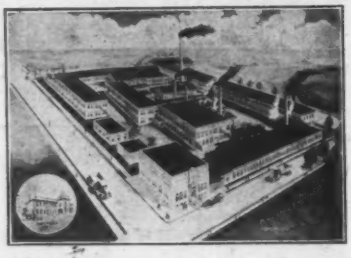

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